Is the Medicare Rural Hospital Flexibility (Flex) Program and small rural hospitals’ conversion to Critical Access Hospital (CAH) status improving the quality of care and the performance of small rural hospitals, enhancing local emergency medical services, and fostering network development? A case study highlighting Plumas District Hospital, Quincy, California, was conducted as part of California’s Medicare Rural Hospital Flexibility (Flex) Program and its program evaluation activities to examine and report on these questions.

**CASE STUDY OBJECTIVES AND METHODS**

The Plumas District Hospital case study was completed to identify community, hospital, and other health care related changes and outcomes that have occurred due to the hospital's conversion to Critical Access Hospital (CAH) status and its involvement in the Flex Program, as well as to identify needs and issues for program planning purposes. To accomplish this, the following occurred:

- Local health services and community background information was collected from April - June 2010 on Quincy, California.
- Interviews of hospital staff, hospital board members, and local emergency medical services (EMS) personnel were conducted in Quincy June 8 & 9, 2010.
- A survey of health care providers (e.g., physicians, physician assistants, nurse practitioners) working at Plumas District Hospital was conducted May – June 2010. The survey response rate was 68 percent.
- A community focus group was conducted in Quincy on June 8, 2010.

Thirty-six individuals from the hospital service area were included in the case study process.

The California Department of Health Services, State Office of Rural Health, administers the Flex Program in California and was the sponsor of the case study. Rural Health Solutions, Woodbury, Minnesota conducted the case study and prepared this report.
QUINCY, CALIFORNIA  
AND THE SURROUNDING AREA

Quincy is located in the Sierra Nevada Mountain Range of northeast California and is surrounded by Plumas National Forest. It is 85 miles northwest of Lake Tahoe and Reno, Nevada, 80 miles east of Chico, California, and 145 miles northeast of Sacramento, California, and is nestled at the base of Bucks Lake, a high mountain lake area.

Quincy is the county seat of Plumas County. Plumas County has an area of 2,613 square miles that consists of lakes, streams, mountains, valleys, and portions of Lassen Volcanic National Park, Lassen National Forest, Plumas National Forest, and Tahoe National Forest. It was once inhabited by the Mountain Maidu Native American Indians, and was later a settlement for gold mining and railroad activity. Plumas County is now a destination for outdoor recreation and offers rafting and boating, golfing, skiing, horseback riding, hiking, hunting, and other activities on its more than 100 lakes, more than 1,000 miles of rivers and streams, and over a million acres of national forest.

While Plumas County experienced an increase in population from 1990 to 2000, its population has declined since that time. In 2009, the estimated population of Plumas County was 20,122 or 7.7 persons per square mile. In 2000, Quincy’s population was 1,879. When compared to the state of California, Plumas County’s population is more likely to be white, have a high school diploma, be 65 years and older, and have a lower median household income. Additionally, the population of Plumas County is less likely to be Hispanic, have a bachelors degree, live in poverty, and be 18 years and younger.

The largest employers in Plumas County are Plumas District Hospital, Government Forestry Services, Sierra Pacific Industries, Collins Pine Company, and C. Roy Carmichael School. The greatest job growth has been in retail trade. In addition, Quincy has a developing arts community and has been working to market local produce through a food coop and farmers market.

1 www.census.gov
When asked, “What makes Quincy a healthy place to live?”, case study participants characterize the community as having: no smog, beautiful trees and environment, clean air, access to many outdoor activities (skiing, waterskiing, boating, backpacking, golfing), high rate of volunteerism, close knit community, four seasons, a culture that supports/ foster creativity and the arts, a local food cooperative and farmers market, social support systems (formal and informal), community college, no traffic, and low crime rate. When asked, “What makes Quincy an unhealthy place to live?”, case study participants report: limited economic opportunities/high unemployment, high cost of housing, limited access to specialty care health services (e.g., oncology), lack of health care providers (including pediatricians and dentists), lack of transportation options, lack of oral health services for MediCal patients, limited broadband in the county, limited educational opportunities for children and youth, fragmented social services system, no redundancy in emergency communications, long patient transport times, declining school enrollment, high prevalence of traumatic injury, and high rates of obesity, truancy, and substance abuse (including prescription drugs).
Plumas District Hospital’s service area includes the communities of Quincy, Meadow Valley, Belden, Keddie, Indian Falls, and Blairsden. This service area has a population of approximately 8,500 full-time residents. The hospital’s 2009 average daily census for acute inpatients was 4.10 patients per day and the hospital had approximately 4,913 emergency room visits and 100,953 outpatient visits that same year. The next nearest hospital to Plumas District Hospital is Eastern Plumas District Hospital (also a CAH) in Portola, California, which is 34 miles southeast of Quincy or approximately 45 minutes by road.

Ambulance services for the area are provided by Plumas District Hospital. It provides full-time advanced life support services through 10 Emergency Medical Technicians-Basics (EMT-Bs) and 9 paramedics. The squad has two mobile intensive care nurses (MICNs) that work in the field and the emergency room. Local EMS’ service area is 600 square miles and includes mountain, canyon, and swift water rescue. EMS dispatches, transfers, and transports have increased over the past three years as indicated in Table 1. The closest EMS squad is located in Portola, California, approximately 34 miles from Quincy.

**TABLE 1: Plumas District Hospital, EMS Run Volume 2007-2009**

<table>
<thead>
<tr>
<th></th>
<th>Dispatches</th>
<th>Transfers</th>
<th>Transports</th>
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<tbody>
<tr>
<td>2007</td>
<td>705</td>
<td>147</td>
<td>418</td>
</tr>
<tr>
<td>2008</td>
<td>721</td>
<td>166</td>
<td>430</td>
</tr>
<tr>
<td>2009</td>
<td>787</td>
<td>170</td>
<td>459</td>
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While patients are referred and transferred from Plumas District Hospital to a number of tertiary centers in the region, over 50 percent are transferred to Renown Regional Medical Center, Reno, Nevada and Enloe Medical Center, Chico, California. This is due to hospital relations, the number of health care providers working in Quincy that also work in Reno, and the roads that ambulances need to travel during the transport. Plumas District Hospital does not have a trauma center designation.

“"The people working on behalf of our hospital [Plumas District Hospital] are not just writing on the wall, they are living out the mission of this hospital all day, every day.””

Case Study Participant

“"You need to be an adrenaline junkie to work in this ER [Plumas District Hospital emergency room] and EMS.””

Case Study Participant
IMPACT OF THE FLEX PROGRAM

The national Medicare Rural Hospital Flexibility Program was created as part of the federal Balanced Budget Act of 1997. Its goals are to:

1) \textit{Convert small rural hospitals to CAH status}

2) \textit{Support CAHs in maintaining and improving access to rural health care services}

3) \textit{Develop rural health networks}

4) \textit{Integrate EMS into the continuum of health care services}

5) \textit{Improve the quality of rural health care}

Plumas District Hospital was selected for an impact analysis using a case study approach in order to examine program outcomes and the impact that the Flex Program has had on local communities. Data were obtained from the California Department of Health Services, State Office of Rural Health and the national Flex Monitoring Team as well as case study participants. Case study participants were asked questions related to each of the Flex Program goals, focusing on outcomes, accomplishments, needs, and on-going issues. Following is a status report for each goal, including: goal status, indicators for success and indicators of on-going needs and issues. Although many of the indicators cannot be directly and/or purely attributed to the activities of the California Flex Program, case study participants familiar with the Flex Program report that without the Flex Program, many accomplishments would have been difficult, delayed, and/or not pursued.
Goal: **CONVERT HOSPITALS TO CAH STATUS**

Status: **ACCOMPLISHED**

**INDICATORS OF OUTCOMES ACHIEVED:**

- Plumas District Hospital was designated a CAH status on October 13, 2006.

- It took the hospital approximately 12 months to explore the CAH conversion option, complete a financial feasibility study, work with the Flex Program to prepare for and complete the CAH application process, and to be surveyed and licensed as a CAH.

- Hospital staff report they received CAH conversion assistance from the California Hospital Association and California Flex Program staff.

- Hospital staff report conversion to CAH status was a “good” decision as it has improved the hospital’s reimbursement and aligns better with the hospital’s overall operations.

- All health care providers report they are aware the hospital is a CAH and 77 percent report it has had an impact on the hospital, including: financially improving access to referral services, and changing some administration/management requirements.

- All hospital staff interviewed report they support the hospital’s conversion to CAH status.

"It [CAH] is currently the difference between our hospital operating in the black of red."  
*Case Study Participant*

"CAH status is critical to the ongoing success of Plumas District Hospital."  
*Case Study Participant*
Goal: SUPPORT CAHs IN MAINTAINING AND IMPROVING ACCESS TO HEALTH CARE SERVICES

Status: OUTCOMES ACHIEVED/ON-GOING NEEDS

INDICATORS OF OUTCOMES ACHIEVED:

• Case study participants (non-health care providers) were asked to report the greatest accomplishments of the hospital over the past five years, they report: maintaining a local hospital/access to health services, local health fair, and retaining hospital staff and health care providers.

• The hospital’s financial status has been positive during nine of the past ten years.

• The hospital has upgraded/enhanced its technology in the lab and other departments, including adding digital radiology.

• The hospital made significant changes within its business department, such as outsourcing billing to a collections agency which improved days cash on hand and days in accounts receivable.

• The hospital made cosmetic changes to its physical plant (e.g., painting, landscaping).

• All health care providers surveyed report their overall opinion of the hospital is “very good” (77%) or “good” (23%).

• Hospital staff report the closure of the hospital in Greenville resulted in limited loss in access to health services for community residents because Plumas District Hospital was able to coordinate care and meet their health care needs.

“" We are still open in our current economic environment. ""

Case Study Participant

“" The support provided through the Flex Program has helped our hospital tremendously. ""

Case Study Participant
Hospital staff report the Flex Program funded conference calls and participation in the annual Rural Health Symposium are beneficial, “provide excellent information”, and allow them to connect with their peers/network.

The hospital has significantly increased the number of employees working at the hospital and staff retention rates have improved since conversion to CAH status.

Health care providers can work four days per week which has supported health care provider retention.

The hospital’s average length-of-stay has declined slightly to 2.5.

The hospital shares a surgeon with the CAH located in Chester, California.

Some health care providers report the hospital/clinic currently operate within the medical home model.

“Plumas District Hospital is the main hospital in Plumas County. It is the only 24/7 surgery and obstetrics provider. There is no safety net if Plumas District were to fail.”

Case Study Participant
The hospital is recruiting three primary health care providers. The inability to recruit health care providers is having a significant impact on hospital finances and access. The hospital is also recruiting a respiratory therapist, certified registered nurse anesthetist, ultrasonographer, laboratory assistant (part-time) and technicians.

Hospital staff and healthcare providers report a need to update the hospital’s strategic plan.

Hospital finances declined in 2009 resulting in no wage increases for staff.

The hospital has an attached long term care facility but no swing bed program. This operational decision has not been revisited since conversion to CAH status.

Case study participants report a need for additional information and updates on the California Flex Program.

Case study participants agree that the reputation of the hospital, its image in the community, and overall hospital-community communications need to improve.

Case study participants report there is a need for hospital staff to better understand the role of and services provided by Plumas District Hospital. This includes a need for internal staff training opportunities to better understand hospital operations.

The hospital’s average daily census has declined (e.g. 4.26 in 2009 and 3.34 in 2010) and obstetrics/deliveries have declined (97 in 2009 and 80 in 2010).

Health care providers surveyed report the greatest issues impacting Plumas District Hospital as: healthcare provider recruitment, need for a new hospital physical plant/updating facilities/expanding facilities, networking with other hospitals, and remaining financially viable.

Hospital staff report there is a need for regularly scheduled coding audits and staff training due to changes in MediCal coding.

There is a lack of consensus across all case study participants regarding the need for a new hospital building/physical plant upgrades; however, most participants report at a minimum some building modifications are needed.

Case study participants report changes in the patient payer mix, decreased reimbursement, increased charity care, inability to recruit primary care providers, and the overall decline in the local economy are having a significant and negative impact on hospital finances.

When asked how the hospital should spend $25,000 in grant funds, case study participants (non-physicians) report: staff recognition; ultrasound equipment; PDAs for some staff; new hospital beds; developing and establishing a formal process for the coordination of local health, human, and transportation services; hiring a grant writer; improving translation services; and re-instating MediCal dental services.
Health care providers report grant funds should be used for: physician recruitment, a new ultrasound facility, upgrading equipment, new ambulance, electronic health record planning, improving nursing wages, and telemedicine.

Community members report concern about the hospital’s ability to recruit new health care providers and the limited capabilities of the hospital/lack of specialty care services.

Community members report the hospital needs a “good promotional campaign”/marketing as community members are not aware of the services available locally and that the hospital will assist patients in financing options.

Case study participants report 15-18 fatal overdoses in the past “couple of years” due to prescription drugs, as well as an overall lack of access to mental health services.

Some case study participants note there are times of stressed community relations between the cities of Greenville and Quincy because Greenville residents do not provide local tax support for the hospital but access its services.

Health care providers report the greatest health care issues affecting Plumas District Hospital’s population as: reimbursement rates, chronic diseases (e.g., obesity), substance abuse, unhealthy lifestyles, price of prescription drugs, cost of co-insurance and co-pays, lack of access to specialty services and timely primary care services, using the emergency room for primary care needs, and needs for a new hospital physical plant and additional primary care physicians.

Case study participants report the hospital needs an electronic health record.

Comments by case study participants related to maintaining/sustaining access to health care services needs/issues include:

— “We need to incorporate hospital-wide training into the new employee training process. Staff need to see how everything works.”

— “We [Plumas District Hospital] lost $250,000 last month. This hasn’t happened in 13 years.”

— “The hospital provides the best care for the resources it has.”

— “People are eligible for MediCal but they can get care free through the ER [emergency room] so it’s [use of the ER] just gone through the roof.”
Goal: DEVELOP RURAL HEALTH NETWORKS

Status: OUTCOMES ACHIEVED/ON-GOING NEEDS

INDICATORS OF OUTCOMES ACHIEVED:

• The hospital is a member of the California Critical Access Hospital Network (CCAHN).
• The hospital shares a surgeon with the CAH in Chester, California.

INDICATORS OF ON-GOING NEEDS/ISSUES:

• Hospital staff report there may be regional networking opportunities (shared services and/or providers) that could include hospitals in Portola, Chester, and Tahoe Forest.
• Hospital department staff report an interest in networking with other department level staff working in other CAHs.
Goal: INTEGRATE EMS INTO THE CONTINUUM OF RURAL HEALTH CARE SERVICES

Status: OUTCOMES ACHIEVED/ON-GOING NEEDS

INDICATORS OF OUTCOMES ACHIEVED:

- Case study participants report local EMS provides high quality health service.
- EMS services are owned and operated by the hospital and are a department of the hospital.
- EMS staff report its medical director is “very involved” in EMS operations and quality improvement activities.
- EMS staff report the squad is “well-trained” and has access to “many” training opportunities (locally and elsewhere as needed).
- Local EMS report they conduct joint training with the Quincy Fire Department because the fire department has an ALS squad rig.
- EMS’s quality improvement activities include conducting run reviews one time per month and measuring and tracking repeat vital signs and time at the scene.
- Community members report having a positive experience with local EMS.
- EMS report the staff is a fully-paid squad with no volunteers.

““ I cannot say enough good about them [local EMS]; they are fast and even if they are busy it’s way better than other places.””
Case Study Participant

““ EMS has a fantastic reputation in the community. There is no question about it.””
Case Study Participant
• EMS staff report the squad has a difficult time recruiting paramedics. They attribute some of the recruitment challenges to the need for all EMS staff to live within five minutes of the hospital and the lack of sleeping quarters at the hospital.

• EMS staff report they have limited interaction with other EMS providers in the region.

• EMS does not have a formal quality improvement program.

• Some case study participants report the hospital’s space dedicated to the emergency room and EMS do not meet current staffing pattern needs and staffs’ ability to have “eyes on all patients at all times”.

• EMS staff report the hospital needs a new ambulance and a power gurney.

• Case study participants report there are black holes or dead zones in EMS’ service area that affect EMS communications.

• Case study participants report EMS has challenges with frequent flyers or those that inappropriately rely on EMS for transportation and use the emergency room for primary care services.
Goal: **IMPROVE THE QUALITY OF RURAL HEALTH CARE**

Status: **OUTCOMES ACHIEVED/ON-GOING NEEDS**

**INDICATORS OF OUTCOMES ACHIEVED:**

- The hospital has a standing quality improvement committee that meets monthly, focuses on medication errors and reporting, risk management, patient satisfaction, and utilization review.

- All health care providers surveyed report the hospital is working to improve the quality of patient care.

- The hospital is Joint Commission accredited.

- Healthcare providers participate in peer review.

- The hospital uses root cause analysis as part of its quality improvement process.

- Hospital board members receive quality improvement related reports during board meetings.

- Although the hospital has made limited progress towards implementing an electronic health record, staff have been trained on and have experience an electronic charting tool for obstetrics patients.

- The hospital hosts a local health fair twice a year that includes a complete blood panel, bone density scans (females), and PSAps (males). This work has served the community from a preventive perspective but has reportedly identified numerous conditions that had not yet been identified.

- The hospital used a drive-through approach for H1N1 and flu clinics which “worked well” for the community and served as an opportunity to test a method that may be used during a future pandemic event.

“**Our success is dependent on quality. If we lose quality, we will lose those that can pay as those that can afford to go elsewhere will do it.**”

*Case Study Participant*

“**We are small but we are mighty. We may not be fancy but we give great care and care about our patients.**”

*Case Study Participant*
Hospital staff and healthcare providers acknowledge and report the value and importance of providing high quality services and/or improving quality of care.

The hospital formalized the process towards establishing a team approach for quality, quality measures, and reporting outcomes.

Case study participants report the hospital provides high quality/"excellent" end-of-life care.

Case Study Participant

"We [hospital] are working hard on quality, trying to move up to industry standards, training staff as needed, and working on staff retention."

Comments/information by case study participants related to improving quality of care include:

— “Here you are a name and a person. Usually we know everyone we take care of.”

— “We are continually updating our care guidelines and educating employees about standards…”

— “We have a team of medical staff, nurses, and ancillary personnel who all respect one another, and work as a team to provide the best care possible. We have kept up with medical technology and we are constantly assessing the medical needs of our community and responding in tangible ways.”
The hospital has made limited progress towards implementing an electronic health record.

Hospital staff report they have not had an opportunity to experience electronic health records at other hospitals.

The hospital does not have a hospital-wide quality improvement program in place that includes measures, tracking mechanisms, benchmarks, and reporting tools for all departments.

Comments/information by case study participants related to improving quality of care include:

— “We have so many EMR [electronic medical record] needs. I would like to go out and see five other EMRs that have been implemented in other CAHs. That would help us [Plumas District Hospital] select a product.”

CONCLUSIONS

This case study highlights many of the local level successes and challenges of Plumas District Hospital and the California Flex Program. Success can be seen through the hospital’s conversion to CAH status, networking, on-going hospital staff and health care provider engagement, and commitment to improving the quality of patient services. Meanwhile, challenges center on health care provider recruitment, addressing the hospital’s physical plant needs, planning for and implementing an electronic health record, improving hospital-community relations, and short and long-term strategic planning. Although Plumas District Hospital has made significant progress, additional support is needed to address many of the identified challenges as well as to assure they can remain financially viable to meet the health care needs of an isolated, rural community with challenging economic conditions and an aging population.
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