

# INTENSIVE CARE IN CRITICAL ACCESS HOSPITALS

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## **EXECUTIVE SUMMARY**

The Critical Access Hospital (CAH) designation was created by the U.S. Congress to support small rural hospitals by allowing cost-based reimbursement for care provided to Medicare beneficiaries. Although CAHs are short-term general hospitals offering routine inpatient care, some also provide intensive care services. Concern has been expressed regarding the appropriateness of intensive care in limited service hospitals and the fiscal advisability of such services in facilities receiving cost-based reimbursement from Medicare.

This study describes what officials at Critical Access Hospitals mean when they report that they provide intensive care and the importance of these services to the hospital and the community it serves. Semi-structured interviews were conducted with Directors of Nursing at 63 CAHs in 27 states. Respondents described the physical structure of the intensive care area, equipment and staffing available for such care, types of patients who receive intensive care, transfer patterns, the role of intensive care in the decision to convert to CAH status, and the perceived value of this service to the community and hospital.

What is reported as intensive care varies across CAHs. Two-thirds of respondents described the area where intensive care was provided as a separate unit, while the remainder reported that intensive care was provided in acute care beds of varying configuration. Equipment used for intensive care often included devices for respiratory and cardiac monitoring and support. Other specialized devices commonly used in intensive care units (ICUs) in larger hospitals were rarely reported. The nurse to patient ratio ranged from 1:1 to 1:3 with the majority reporting a ratio of 1:2.

More than three-quarters of respondents reported that patients with cardiac, respiratory, and gastrointestinal problems would be admitted to their intensive care unit or beds. Additionally,

most would admit patients with diabetes, severe infection, stroke, drug or alcohol overdose, or severe allergy. Fewer respondents reported that they would admit patients with neurological problems, conditions resulting from trauma, or severe mental illness. The majority of respondents also reported that their intensive care area is sometimes used for immediate post-surgical recovery, most often as back up in the evening or on weekends. A number of respondents felt that the acuity level of patients admitted was likely less than that of patients admitted to ICUs in larger hospitals.

It is not easy to draw a sharp line between CAHs that offer intensive care and those that do not. Rather, it appears that there is a continuum of intensive care along which the intensity of nursing care and technology increases and CAHs are represented at various points on that continuum. However, none of the CAHs studied offered the level of technologically intense care that is provided in ICUs in large tertiary care hospitals. In general, nurse to patient ratio not technology could arguably be the defining characteristic of intensive care in Critical Access Hospitals.

Respondents overwhelmingly believed there would be negative consequences if intensive care services were discontinued. Most frequently cited was the hardship it would create for patients and families if they had to receive care outside their community. There would be negative effects on the hospital (and on the community by extension) including staff morale, inability to retain physicians and critical care-trained nurses, inability to continue specific services such as surgery, and a loss of admissions resulting in loss of revenue. Respondents believed that the hospital would no longer be viewed as a “real” hospital and expressed their own concern regarding the quality of care they could offer in the absence of capacity to provide the intensive care services they now offer.

Although not specifically a cost analysis, the findings from this study do support some discussion of the financial implications of the provision of intensive care in CAHs in terms of potential inefficiencies from allowing these services in a cost-based reimbursement setting. There was no evidence of change in the provision of intensive care services in response to cost-based reimbursement, a finding consistent with previous work. If patients needing intensive care could not continue to receive it at their local CAH, Medicare would still bear the cost of these admissions at other institutions, where costs would likely be higher due to both increased technology and higher average nursing wages. In addition, the average cost per non-intensive care Medicare patient treated at the CAH would likely rise as well, since the fixed costs of the CAH would be spread across fewer admissions.

Many Directors of Nursing interviewed indicated an awareness of and continued review of the types of clients that could safely be cared for in their hospital and those that needed care at a larger facility. This study, coupled with exploration of cost report data, suggests that the majority of CAHs do not provide intensive care services. However, interviews with Directors of Nursing for a sample of those who do provide such care indicate that these hospitals provide a service believed by many clinicians and community members to be both appropriate for the level of care provided by these limited service hospitals and important for the physiological and psychological well-being of the community.

## **BACKGROUND**

The Critical Access Hospital (CAH) designation was created by the U.S. Congress in 1997 to provide support for small rural hospitals by allowing cost-based reimbursement for care provided to Medicare beneficiaries. To qualify to become a CAH, a rural hospital may have a maximum of 25 acute care beds and be considered critical to the care of the community by virtue of distance from other hospitals, by geography limiting access to another hospital, or by certification by the state as a “necessary provider”. Other requirements for CAH status include provision of 24-hour emergency department (ED) services and an average length of stay for acute care of 96 hours or less. Because of their short-term, limited care nature, Critical Access Hospitals must establish a relationship(s) with other hospitals to which they can transfer patients needing more care.

Although by definition all CAHs are short-term general hospitals that offer routine inpatient care, some CAHs also provide intensive care services. Concern has been expressed regarding the appropriateness of such care in a limited service hospital. Additionally, intensive care services are more costly than other types of inpatient care, raising concerns about the fiscal advisability of allowing such services in facilities that receive cost-based reimbursement from Medicare.

In response to these concerns, The North Carolina Rural Health Research and Policy Analysis Center conducted a study to describe 1) what it means to provide intensive care in a Critical Access Hospital, and 2) the importance of these services to the hospital and the community it serves. During the winter and spring of 2004, semi-structured interviews were conducted with Directors of Nursing at 63 Critical Access Hospitals. Analysis of these interviews describes the physical structure of the intensive care area, equipment available for

care, staffing for intensive care, the types of patients who receive intensive care, transfer patterns, the role of intensive care in the decision to convert to CAH status, and the perceived value of these services to the community and to the hospital.

## **METHODS**

*Data Source and Sample Selection:* All hospitals designated as CAHs as of January 1, 2004 were included in the sampling frame (n=845). The Hospital Cost Report Information System (9-30-03 release) was used to identify CAHs reporting intensive care services. These annual cost reports contain information from Medicare-approved health care providers and include data reporting the number of beds in intensive care units (ICU), cardiac care units (CCU), surgical intensive care units (SICU), and burn care units. Additional variables report the number of patient days for each type of unit.

Cost report data were available for 99.4% of the CAHs in the sampling frame. Years of available cost data varied for each hospital and included information from as early as October 1995 and as late as April 2003. The number of years of cost data that were available for each hospital ranged from 2 to 8. Hospitals were considered to have provided intensive care if they reported either beds or days for any of the four types of intensive care units in any year. Two hundred and twenty CAHs (26%) were identified as providing intensive care in at least one of the cost report years. Of those hospitals, 159 (19% of all CAHs and 72% of those with intensive care services reported in any year) reported beds or days in the most recent year and were considered to be currently providing intensive care. A random sample of hospitals from this group was chosen for telephone interviews.

There were also 61 CAHs that did not currently report intensive care beds or days, but had done so in previous years. Because of uncertainty regarding the reliability of the intensive care variables in the cost report data, a random sample of these hospitals was also selected to verify that intensive care was not currently provided but had been in the past.

Absence of intensive care beds and days in the most current cost report year was found to be an unstable identifier of both current and prior provision of intensive care in CAHs. In fact, some hospitals on the list of former providers still provided intensive care and were included in the interview group. Thus, random samples were drawn from CAHs identified by cost reports as current providers and those identified as former providers. However, the final set of hospitals for which interviews were completed cannot be weighted to represent all CAHs due to lack of precision in the denominator for hospitals providing such services. For a more detailed discussion of the limitations of using secondary data to determine the total number of CAHs providing intensive care services in any given year, see Addendum.

*Semi-structured Interview Form:* Two semi-structured interview protocols were developed in collaboration with a physician advisor knowledgeable about rural hospital care. One protocol was designed to capture information from CAHs that provide intensive care services in a unit designed and/or staffed for that purpose. A second modified form was developed for hospitals that provide intensive care services using monitored medical-surgical beds or medical-surgical beds located for easy observation of the patient. Three nearby CAHs were visited to pilot test and inform revisions of the interview protocols.

The two interview protocols asked respondents for the following information: a physical description of the area where intensive care is provided; equipment available for intensive care; availability of surgical services at the hospital; the types of patients admitted for intensive care



and frequency of admissions; staffing patterns; staff training for intensive care; methods and destination for patient transfer; whether ICU status was part of discussions regarding conversion to CAH status; and the perceived impact on the community and on the hospital of continuing or discontinuing intensive care services.

*Interview Process:* Directors of Nursing at sample CAHs were contacted by telephone. Screening questions determined if the hospital currently, formerly, or never provided intensive care services. These questions served two functions—to identify hospitals eligible to participate and to assess the accuracy of cost reports in identifying CAHs that provide intensive care services (see Addendum). Eligible hospitals were invited to participate and the interview protocol was provided for review before the respondent consented to the interview. An interview was scheduled with willing participants at their convenience. Interviewees were encouraged to include others in the conversation as appropriate.

*Human subjects:* The study protocol was reviewed and approved by the Committee on the Protection of the Rights of Human Subjects at the University of North Carolina at Chapel Hill School of Medicine.

## **RESULTS**

Interviews were completed with officials at 63 CAHs identified through the screening calls as providing intensive care either in a unit designed for that purpose or on the medical/surgical floor. Except where noted, percentages reported in the tables that follow were calculated based on the total group of interviewees. Nonresponse for any given question was small.

### *Characteristics of Hospitals and Respondents*

Interviews were conducted with officials in CAHs in 27 states. Virtually half (49%) of the hospitals were in the Midwest. The rest were distributed evenly among the other three Census regions. The survey was conducted with Directors of Nursing or persons with other titles but similar clinical backgrounds as opposed to non-clinician executives or financial managers. Respondents had on average nearly 5 years experience (58 months) in their current position with a range of 4 months to 17 years. Some respondents with less than one year in their current position had been employed at the hospital in other positions prior to their current job.

### *Facilities, Equipment and Staffing for Intensive Care*

The physical layout of the area used for intensive care is described in Table 1.

<b>Table 1: How Intensive Care (IC) is Provided</b>	
	<b>Percent (Number)</b>
<b>Layout</b>	
Intensive care provided in a separate unit that has its own nursing station	67% (42)
Intensive care provided in acute care beds	33% (21)
Mean number of beds (range)	3.5 (1 – 9)
<b>Equipment Available for IC Patients</b>	
Ventilator	87% (55)
Computerized EKG	92% (58)
Invasive Arterial Monitoring	65% (41)
End Tidal CO <sub>2</sub> Monitor	59% (37)
Transvenous Pacer	40% (25)
Apnea Monitor	33% (21)
Pulmonary Artery Catheter	25% (16)

Two-thirds (67%) of respondents described the area where intensive care was provided as a separate unit. Each unit had its own nursing station and was (or could be) physically closed off from the remainder of the acute care area. Many respondents described a typical intensive care unit with glass walls that allow for visualization of patients from the nursing station. One third (33%) reported that intensive care was provided in acute care beds with configuration of the intensive care beds varying from hospital to hospital. Two described their intensive care area as distinct but not separate from their medical-surgical floor. Most reported that the rooms used for intensive care were adjacent to or across from the nursing station and that the rooms had windows to allow visualization of the patient. In nine of the 21 CAHs with intensive care provided on the medical/surgical floor, respondents referred to their intensive care beds as monitored beds, despite the fact that intensive care unit beds and/or days were reported on their Medicare cost reports. The average number of intensive care beds was 3.5.

In 27 CAHs, the area where intensive care is provided was referred to as an “Intensive Care Unit,” including some hospitals that provided intensive care in medical-surgical rooms near the nursing station. Other designations for intensive care areas included Coronary Care Unit, Critical Care Unit, Special Care Unit and monitored beds. A number of respondents acknowledged that the name “Intensive Care Unit” might not accurately reflect the care needed by patients in the unit but that the name had been kept from when the hospital was larger, or was used because it was a designation that was familiar to patients and visitors.

Equipment used for intensive care included devices for respiratory and cardiac monitoring and support (Table 1). All but one hospital had continuous and/or computerized electrocardiographic (EKG) capability (4 hospitals had continuous but not computerized capability) and 55 hospitals had ventilators. Much less frequently reported were other

specialized devices commonly used in ICUs in larger hospitals, such as fiberoptic bronchoscopes (10 hospitals), mixed-venous oxygen saturation monitors (3 hospitals) and dialysis machines (1 hospital). None of the CAHs in the study used intracranial pressure monitors in the intensive care area.

In two-thirds of CAHs, intensive care areas were staffed with Registered Nurses only. The nurse to patient ratio ranged from 1:1 to 1:3 with the majority (60%) reporting a ratio of 1:2. More than one respondent noted that although their typical nurse:patient ratio was 1:2, a patient on a ventilator would receive 1:1 care. All respondents reported that nursing staff that care for intensive care patients had Advanced Cardiac Life Support (ACLS) certification. Although not specifically queried, some respondents noted that ACLS training was required and other noted that only nurses in specialty care areas (ICU, ED, surgery) had ACLS training. Seventy-three percent (73%) reported that nursing staff had Pediatric Advanced Life Support (PALS) certification although some noted that only selected staff had this training, particularly ED staff.

#### *Patients Who Receive Intensive Care*

Respondents at 29% of CAHs reported that patients were admitted to the intensive care area daily. Another 49% admitted patients weekly with the remainder admitting to their intensive care area less frequently. Hospital officials were asked whether patients with specific diagnoses would be admitted to their intensive care unit or beds. The majority of hospitals also reported estimates of the number of patients in each category admitted over the past year. A summary of the most frequently admitted diagnoses is displayed in Table 2.

<b>Condition</b>	<b>Percent who would admit patient with the condition to ICU or IC Beds (N)</b>	<b>Percent who report condition as among the most frequent admits (N)</b>
Chest pain / cardiac event	98 % (62)	92 % (58)
Diabetic shock / ketoacidosis	97 % (61)	41% (26)
Severe COPD / emphysema	95 % (60)	78 % (49)
GI emergency, e.g., obstruction, GI bleed, appendectomy	92 % (58)	49 % (31)
Bacteremia / sepsis	89 % (56)	30 % (19)
Drug/alcohol overdose	89 % (56)	54 % (34)
Stroke*	82 % (42)	45 % (23)
Asthma (status asthmaticus)	81 % (51)	16 % (10)
Other respiratory emergency, e.g., pneumothorax, foreign body in airway	79 % (50)	19 % (12)
Severe allergic reaction / anaphylaxis	76 % (48)	0 % (0)
Alcoholism with comorbidity	68 % (43)	13 % (8)
Intractable seizures	37 % (23)	3 % (2)
Meningitis	32 % (20)	0 % (0)
Severe fracture	22 % (14)	3 % (2)
Other severe trauma	22 % (14)	2 % (1)
Severe mental illness	13 % (8)	2 % (1)
Severe head injury	8 % (5)	0 % (0)
Third degree burns	3 % (2)	0 % (0)

\*Stroke was added to the interview form after the interview process had begun and was answered by 51 respondents.

More than three-quarters of respondents reported that patients with cardiac, respiratory, and gastrointestinal problems would be admitted to their intensive care unit or beds. Additionally, most would admit patients with diabetes, severe infection, stroke, drug or alcohol overdose, or

severe allergy. Fewer respondents reported that they would admit patients with neurological problems, conditions resulting from trauma, or severe mental illness. While many CAHs admit patients with a wide variety of health problems, the most frequent types of patients treated in intensive care areas were patients with cardiac, respiratory, gastrointestinal, and alcohol or drug-related conditions. Stroke and diabetes were also common diagnoses among patients admitted. It should be noted, however, that in some hospitals there were only a small number of total admissions requiring intensive care each year, even among the most frequently admitted diagnoses. In all but four CAHs, inpatient surgery is performed, and 61% of respondents reported that their intensive care area is sometimes used for immediate post-surgical recovery, most often as back-up for surgery performed in the evening or on weekends. Some respondents also reported that their intensive care area was used for post-operative care following the initial post-anesthesia recovery period.

#### *Distance to Transfer Hospitals*

All respondents listed more than one hospital to which they would transfer patients who needed care that could not be provided in the CAH. The average distance to the first transfer hospital listed was 64 miles with a range of 12 to 309 miles. Sixteen percent (16%) of respondents reported transferring patients to a hospital 100 or more miles away.

#### *Conversion to CAH – Was Closure of Intensive Care Discussed?*

Closure of the intensive care area was discussed at 15 hospitals (24%) during preparations for conversion to CAH status. The most common reasons for maintaining the intensive care area included the need for that level of care by patients served at their hospital, support by physicians

for maintaining the area, and the value of an intensive care area for short-term stabilization and observation as part of the process of triaging patients to the most appropriate care. More than one respondent noted that maintenance of the intensive care area is a recurring discussion because of low census and/or the difficulty of maintaining appropriate staff skill levels. Many of the issues raised by Nursing Directors in response to this question were repeated in responses to questions that followed regarding the effect on the community and on the hospital of discontinuing intensive care. Those responses are discussed in detail in the section that follows.

*Perceived Effect of Discontinuing Intensive Care*

In separate questions, respondents were asked for their perceptions of how closure of the intensive care area would affect their community and their hospital. These open-ended questions are summarized in Table 3.

<b>Table 3: Perceived Effect of Eliminating Intensive Care Units or Beds</b>	
	<b>Percent of respondents expressing concern (N)</b>
Hardship of transfers on patients and family	56% (35)
Decrease in admissions, loss of revenue	35% (22)
Negative effect on staff	30% (19)
Other services would be limited or eliminated	24% (15)
Damage to hospital's image	24% (15)
Negative effect on outcomes, quality of care	24% (15)
Loss of staff	14% (9)
No effect on community and hospital	8% (5)
Problems with ability to transfer patients	6% (4)

The most frequently mentioned effect of unit closure was that it would create hardship for patients and their families. It was noted that patients would have to be transferred to other hospitals, often a great distance away. Many of the patients are elderly and prefer to receive care in their own community. Issues mentioned were that family members would face transportation difficulties and would make fewer visits (many are poor, do not have cars and cannot afford to pay for transportation, or are elderly and have difficulty driving), and that elderly patients would find receiving care in a larger, unknown hospital frightening.

The second most commonly mentioned effect of closing the ICU (35%) was that the CAH would lose admissions and revenue. It was felt that physicians in the community and on the hospital staff would “take their business elsewhere”. Another concern was that once people began to use other hospitals for intensive care, they would begin to see the larger facility as the preferred source for all their health care needs.

Almost a third of respondents (30%) voiced concern about the impact of loss of the unit on hospital staff. Issues mentioned included that physicians want to know that the capacity for more intensive care is there if patients need it, that physicians need the option to have their patients cared for one-on-one, and that if necessary equipment is not available when problems arise it will create stress on medical staff. Staff morale would suffer if they could not treat their patients locally, had less opportunity to maintain skills, and perceived their hospital as providing a lower level of care.

Some respondents (24%) said that if the hospital did not have an ICU it would limit other services that are currently offered. Most frequently cited was that without ICU back-up, the types of surgery that could be performed would be even more limited or all surgery would be discontinued. It was also felt that the range of conditions that could be treated at the hospital



would decrease, because to admit certain types of patients, physicians needed to know that if their patient “goes sour” more intensive care is available.

Concern was voiced regarding the effect of ICU closure on the hospital’s image in the community (24%). Several respondents mentioned that people would see the CAH as a just a “band-aid station”, and many said their institution would have decreased credibility and that the community would lose confidence in them as a health care provider. Several respondents did mention that they thought that while the hospital’s ability to care for patients would not change (they would just receive more intensive care on the medical/surgical floor), the community would not understand this and would think the facility was less of a hospital.

Negative health outcomes and poorer quality of care as a result of discontinuing intensive care was mentioned by 24% of respondents. Several respondents said simply that people would die. Others mentioned that needed treatment would be delayed. While some respondents felt that patients with chest pain would drive long distances to other facilities, with possible negative consequences, others thought that they would still come to the local CAH but that the ability of the hospital to respond appropriately would be compromised. Some mentioned that they would no longer be able to provide important time-sensitive treatments such as thrombolytic treatment for stroke or heart attack patients. Six percent (6%) of respondents noted that patient transport barriers sometimes required that a patient be treated locally while waiting for transfer and that without intensive care services their condition could deteriorate while waiting. It was also noted that sometimes it is simply impossible to transfer patients in bad weather.

A final issue raised by 14% of respondents was that their CAH would lose staff if it did not have an ICU. It was felt that current physician staff might leave to practice elsewhere if they did not have ICU backup for their patients. Concern was also voiced about their ability to recruit

new staff, both physicians and nurses. Specifically mentioned were surgeons, cardiologists, and nurses trained in critical care.

Only 8% of respondents felt that closing the ICU would have no effect on their CAH. These individuals indicated that the patients currently cared for in the unit would simply receive the same type of care on the medical/surgical floor or that the number of patients currently cared for in the ICU or intensive care beds was so low that closure would not make a meaningful difference.

## **DISCUSSION**

This study describes what officials at Critical Access Hospitals mean when they report that they provide intensive care. There is variation across CAHs in what is meant by intensive care, in terms of the physical configuration of the area where services are delivered, the type and acuity of patients treated, and the equipment and staffing used for intensive care. It is not easy to draw a sharp line between CAHs that offer intensive care services and those that do not. Rather, it appears that there is a continuum of intensive care along which the intensity of nursing care and technology increases, and CAHs are represented at various points on that continuum. What is certain is that none of the CAHs studied offer the level of technologically intense care that is provided in ICUs in large tertiary care hospitals. Intensive care in some CAHs resembles to some extent the intensive care provided in larger hospitals, i.e., care is provided in a self-contained unit with one-on-one nursing, specialized equipment for patient treatment and support, support by respiratory therapy, and restricted access to patients. However, in other CAHs, intensive care may mean close monitoring by a nurse with a limited number of patients for whom s/he is responsible (1:1 to 1:3 nurse:patient ratio) in a medical/surgical bed that may or may not

be equipped with specialized equipment but is located in such an area to allow visualization of the patient or quick access to the patient. Thus, nurse to patient ratio, not technology, could arguably be the defining characteristic of intensive care in Critical Access Hospitals.

Conditions cared for in CAH intensive care areas were typical of chronic conditions that might lead to admission to intensive care units in larger hospitals. They included cardiac, respiratory, endocrine, and gastrointestinal conditions as well as drug or alcohol overdose. CAHs in this study were much less likely to have intensive care admissions for chronic or acute neurological conditions or conditions resulting from trauma. Some respondents also felt that the acuity level of patients admitted was likely less than that of patients admitted to ICUs in larger hospitals, and noted that they would only admit those patients that could be rapidly stabilized and not require transfer. More than one respondent reported that they viewed their intensive care area as more of a subacute care unit or step-down unit and that it was not intensive care as provided in a large, urban hospital. Further, 84% of respondents reported that the 96-hour average length of stay limitation for Critical Access Hospitals did not limit their ability to provide intensive care services.

Regardless of the difference in patient acuity between CAH and larger hospital ICUs, intensive care described in the CAHs did involve care by RNs and LPNs with a smaller patient care load than their counterparts with general medical/surgical patients, and by nurses who had training in Advanced Cardiac Life Support. A number of respondents reported that availability of one-on-one nursing was a positive for surgeons who use the unit for post-surgical care beyond the immediate post-surgical recovery period.

Of particular interest to those concerned about the viability of rural health care providers was the perceived impact of loss of these services for the hospitals studied. Respondents

overwhelmingly reported that there would be negative consequences of discontinuing intensive care services. Only 8% of respondents reported that they believed closure of intensive care services at their hospital would have no effect on the community or on their hospital. More than half reported a negative impact on community members and their families who would be burdened by having to receive care outside their community. Effects on the hospital (and on the community by extension) included an impact on clinical staff ranging from problems with staff morale to inability to retain physicians and critical care-trained nurses, inability to continue specific services such as surgery, and a loss of revenue resulting from a loss of admissions. Respondents believed that the hospital would no longer be viewed as a “real” hospital and expressed their own concern regarding the quality of care they could offer in the absence of capacity to provide the intensive care services they now offer.

Although not specifically a cost analysis, the findings from this study do support some discussion of the financial implications of the provision of intensive care services in CAHs in terms of whether there are inefficiencies from allowing the provision of intensive care in a cost-based reimbursement setting. Because intensive care in CAHs involves similar nursing intensity but less technology than intensive care in larger hospitals, Medicare costs are likely to be less in the CAH. In addition to savings realized by lower levels of technology, average nursing wages are lower in rural areas than in urban areas where many of the referral hospitals are located. Also, we did not see evidence of changes in how intensive care services were provided in response to cost-based reimbursement. This finding is consistent with that of the Rural Hospital Flexibility Program Tracking team who found that intensive care services were among the least likely of all services to have been expanded since conversion to CAH status.<sup>1</sup> In addition, the provision of intensive care services is linked to other important aspects of hospital survival. For

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<sup>1</sup> Rural Hospital Flexibility Program Tracking Project. *Year 02 Report* (covering fiscal year 2000-2001. September 15, 2001.

example, many of the perceived consequences of unit closure reported by respondents, such as loss of other services and/or professional staff, would result in loss of admissions. If patients needing intensive care could not continue to get it at their local CAH, Medicare would still bear the cost of these admissions at other institutions. The average cost per Medicare patient treated at the CAH would likely rise as well, since the fixed costs of the CAH would be spread across fewer admissions.

Many Directors of Nursing interviewed for the study indicated an awareness of and continual review of the types of clients that could safely be cared for in their hospital and those that needed to be triaged to a larger facility. Surveys of CAHs coupled with exploration of cost report data as part of this study suggest that the majority of CAHs do not provide intensive care services. However, interviews with Directors of Nursing for a sample of those who do provide such care indicate that these hospitals provide a service believed by many clinicians and community members to be both appropriate for the level of care provided by these limited service hospitals and important for the physiological and psychological well-being of the community.

## ADDENDUM

### *Are Hospital Cost Reports a Reliable Way*

#### *to Determine Which Critical Access Hospitals Provide Intensive Care?*

The indication of intensive care beds and/or hospital days in cost reports routinely submitted by hospitals that receive reimbursement from Medicare has been used as a marker of the extent to which intensive care is provided in small hospitals. In the course of this study, it was found that these data elements in the cost reports are unreliable indicators of provision of intensive care as a type of service, let alone the nature or extent of the intensive care services provided. To further evaluate the usefulness of cost report information as a source of information about intensive care in Critical Access Hospitals, data collected by this study was combined with data that could be gathered from hospital worldwide web sites to determine which of the 220 hospitals identified from cost reports as providing intensive care at present still provide such care and if hospitals believed to have discontinued intensive care actually discontinued it. The results are summarized below.

- For 58% of hospitals (N=128), interview data or data from the worldwide web AGREE with cost report data, i.e., hospitals with cost report data indicating provision of intensive care do provide such care AND hospitals with cost report data indicating discontinuance of intensive care do not provide such care.
- For 15% (N=32), interview data or data from the worldwide web DISAGREE with cost report data, i.e., hospitals with cost report data indicating provision of intensive care do not provide such care AND hospitals with cost report data indicating discontinuance of intensive care have not discontinued such care.

- For 27% (N=60), hospitals were not contacted and there was insufficient information on the hospital web site or no hospital website existed to determine what services were offered. These “unknown status” hospitals were equally likely to be in the “provides intensive care” category or in the “discontinued intensive care” category.

Further, while the percent of CAHs that currently offer intensive care services as identified through cost report data is only 18%, in a survey of Critical Access Hospitals conducted by the Rural Hospital Flexibility Tracking Project in 2001, 32% of hospitals surveyed reported that they provided intensive care unit services as part of their scope of services. Those that were “later converters”, i.e., those that converted to CAH status since January 2000 were more likely to report having an intensive care unit than were “early converters” (22.6% vs. 12.9%).

This study underscores the variety of scenarios in which services called intensive care can be provided in Critical Access Hospitals. To better understand what a hospital official means when reporting that his or her hospital provides intensive care requires questions in sufficient number and detail to describe each hospital’s services.