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Scope of services offered by Critical Access Hospitals: Results of the 2004 National CAH survey

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Scope of Services Offered by Critical Access Hospitals: Results of the 2004 National CAH Survey

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With funding from the federal Office of Rural Health Policy (PHS Grant No. U27RH01080), the Rural Health Research Centers at the Universities of Minnesota, North Carolina, and Southern Maine are cooperatively conducting a performance monitoring project for the Medicare Rural Hospital Flexibility Program (Flex Program). The monitoring project is assessing the impact of the Flex Program on rural hospitals and communities and the role of states in achieving overall project objectives, including improving access to and the quality of health care services; improving the financial performance of critical access hospitals (CAHs); and engaging rural communities in health care system development.

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EXECUTIVE SUMMARY

We used three years of national survey data (2000, 2002, 2004) to examine the scope of services offered by Critical Access Hospitals (CAHs). We investigated how the services offered by CAHs have changed, the role of network affiliations in these changes, and the reasons administrators gave for reported service expansions. With three years of survey data, we also examined how services offered have changed over time.

Most CAHs offer a core of services including radiology, laboratory services, emergency rooms, swing beds, pharmacy, outpatient rehab, outpatient surgery, and specialty clinics. While this core has not changed significantly over the period of three surveys, many CAHs have added or expanded services not dependent on inpatient capacity. Of the 474 CAHs surveyed in 2004, at least 20% added or expanded radiology, specialty clinics, outpatient rehabilitation, and laboratory services, while others commonly added or expanded outpatient surgery and rural health clinics. Of the 540 CAHs surveyed during the three survey years, at least one quarter added or expanded radiology, specialty clinics, outpatient rehab and laboratory services.

In 2004, CAH administrators were asked the reason they changed the services offered. For over half of the added or expanded services, the majority of administrators reported that community need was the reason for these expansions. For services requiring specialized staff, including surgery and obstetrics, the majority of administrators added or expanded the services because they had the clinical staff available to provide these services. Increasing hospital revenue was the primary reason for only two services (rural health clinics and swing beds), while improving quality was the most common reason for only one service, pharmacy.

Many CAHs also expanded surgical services. In the 2000 and 2004, CAH administrators were asked how many surgical procedures were performed at their hospitals. Fifty-four offered inpatient surgery and 90 offered outpatient surgery in both years. The average annual number of inpatient surgical procedures has changed little over time, but outpatient surgical volume has increased steadily. Of the 90 hospitals performing outpatient surgery in 2000 and 2004, 40 had at least a 10% increase in outpatient surgical volume between 2000 (post-conversion) and 2004. However, nearly as many hospitals had decreased their outpatient surgical volume by 10% or more during this time period. This volatility in surgical volume may be explained, at least in part, by additions and losses of medical staff.

In previous years (2000 & 2002), we found that organizational linkages, such as system membership or network affiliation, had a significant impact on whether hospitals added or expanded the services they offered. In the 2004 survey, we did not find this relationship, with system membership or network affiliation having little influence on whether CAHs added or expanded services. However, hospitals having a mutual agreement for specialty services with another health care organization were significantly more likely to have added or expanded specialty clinics. Expansion of outpatient services by CAHs mirrors a similar trend in larger hospitals, both urban and rural, and is probably not directly attributable to the Flex program. The identification of community need as a primary influence on service expansions is a promising indicator of community-oriented strategic planning by CAH administrators and their boards.

INTRODUCTION

As a section of the Year Two report, the Rural Hospital Flexibility Program (Flex Program) Tracking Team in 2000 examined the scope of services offered by Critical Access Hospitals (CAHs) (Hartley, Coburn & Gale, 2001). Based on the responses of 218 surveyed CAHs, we identified a number of key findings about the types of services offered, the types of services expanded, added, and dropped, and the impact of network affiliations on service expansions. According to their responses, we found that licensed bed and length of stay limitations did not necessarily lead to downsizing the services offered. In fact, many CAHs were adding new services and/or expanding existing services. New services and expansions primarily focused on services not dependent on inpatient capacity, including specialty clinics, outpatient surgery, radiology, and laboratory services. When we surveyed these same hospitals, plus an additional group of hospitals for a total sample of 388 in 2002, we found much the same thing, with expansions of specialty clinics, outpatient surgery, radiology, outpatient rehabilitation, rural health clinics and swing beds topping the list. These service expansions may have resulted from network affiliations and opportunities for CAHs to build expansion costs into cost-based reimbursement. Community service needs appeared to play a secondary role in CAHs' decisions to add or expand services, based on survey responses. However, conversations with CAH administrators suggest that the link between meeting community service needs and remaining financially viable is well-understood, and to present these as competing strategies is too simplistic.

In 2004, the Flex Monitoring Team again surveyed CAHs to determine the scope of services offered. As in previous surveys, we examined changes in the services offered, the role of network affiliations in these changes, and the reasons for these expansions. With three years

(2000, 2002, and 2004) of survey data, we also investigated how services offered by CAHs have changed over time. It has been suggested by some consultants working with CAHs that, as small hospitals attain a degree of financial stability, they first address physical plant needs, especially life safety code issues. Once these needs have been met, they then begin to focus on strategic changes in scope of services, quality improvements, and ultimately community needs and population health. Based on this model, service additions or expansions with a greater revenue potential receive the high priority, while services targeted at community needs are added later. While the structure of the survey questions over multiple years does not enable a rigorous hypothesis-testing approach to this issue, a comparison of responses from the earlier survey with those from the most recent survey, both in terms of what services are being added or expanded, and in terms of the reasons given for these service changes, affords some exploration of this theory. However, as mentioned above, we should not seek conclusive evidence of a hierarchy of needs, when revenue-enhancement and meeting community needs are both seen as a means to achieve financial stability. Moreover, expansion of outpatient services has been an industry trend for many years, and may be unrelated to the Flex Program or to a strategic hierarchy.

METHODS

Survey Respondents

All surveys were conducted by the University of Minnesota Survey Research Center. In 2000, 218 hospitals responded to the survey. In 2002, 388 responded, including nearly all hospitals surveyed in 2000 and 187 hospitals not previously interviewed. Lastly in 2004, the sample was stratified by date of CAH conversion. CAHs converting prior to May 1, 2001 were considered early converters, while those converting between May 1, 2001 and December 1, 2002 were considered late converters. The total number of respondents for the 2004 survey was 474

for a response rate of 95%. For the longitudinal analysis, the sample included 134 CAHs who completed all three surveys, 174 who participated twice, and 232 who participated in only one survey, for a total of 540 hospitals who completed at least one survey.

Survey Instruments

The survey instruments used in this report were developed jointly by all members of the Flex Tracking Team in 2000 and 2002 and by the Flex Monitoring Team in 2004. In all three surveys, we asked respondents to identify the services that they offer in their hospital (See Figure 1 for services included by survey year). For each service, interviewers asked whether the hospital had the service prior to conversion, if the service had changed after conversion, and how the service had changed since conversion (added, expanded, limited, or dropped). In 2004, for hospitals that had converted prior to May 1, 2001, respondents were asked if services had changed in the last two years. Also, in 2004, hospitals with service changes were asked to give the main reason for the change. Lastly, in 2000 and 2004, we requested the number of inpatient and outpatient surgical procedures performed for hospitals who stated they had surgical services.

Figure 1
Services Included in Surveys, 2000-2004

Service	Type of Service	Survey Year
Assisted Living	Long Term Care	All
Emergency Department	Outpatient	2004
EMS/Ambulance	Ancillary	All
Home Health Care	Long Term Care	All
Hospice Services	Long Term Care	All
Intensive Care	Inpatient	2000 & 2002
Laboratory Services	Ancillary	All
Obstetrics	Inpatient	All
Pharmacy Services	Ancillary	2002 & 2004
Psychiatric Care	Inpatient	2004
Psychiatric Care	Outpatient	All
Radiology	Ancillary	All
Rehabilitation	Inpatient & Outpatient	All
Rural Health Clinics	Outpatient	All
Skilled Nursing Facility	Long Term Care	All
Specialty Clinics	Outpatient	All
Surgery	Inpatient & Outpatient	All
Swing Beds	Long Term Care	All
Urgent Care	Outpatient	2004

RESULTS

What services do CAHs typically offer?

As shown in Table 1, there is a core set of services that are provided by a majority of CAHs. At least 75% of the CAHs surveyed have radiology, laboratory services, emergency rooms, swing beds, pharmacy services, outpatient rehabilitation, outpatient surgery, and specialty clinics. In addition, at least half of surveyed hospitals provide inpatient rehabilitation, inpatient surgery, and skilled nursing facilities. The typical services offered by CAHs have changed little over time with a few exceptions. In 2004, CAHs were more likely to offer outpatient surgery, pharmacy services, and skilled nursing beds than in previous years.

Table 1
Services Offered by Critical Access Hospitals, 2004 (N=474)

Service	# of Hospitals Offering	% of Hospitals Offering
Radiology	474	100
Laboratory	473	99.8
Emergency Room	472	99.6
Swing Bed Services	455	96
Pharmacy	451	95
Outpatient Rehabilitation	410	87
Outpatient Surgery	376	79
Specialty Clinics	370	78
Inpatient Rehabilitation	335	71
Inpatient Surgery	318	67
Skilled Nursing Facility	261	55
Rural Health Clinics	209	44
Obstetrics	186	39
Home Health Services	184	39
Ambulance/EMS	163	34
Urgent Care	149	31
Hospice	132	28
Outpatient Psychiatric	76	16
Assisted Living	63	13
Inpatient Psychiatric	21	4

What changes have CAHs made in the services they offer?

As in the past, the changes in the scope of services offered have primarily been additions or expansions, with few hospitals dropping or limiting services. Only the number of hospitals providing home health care and obstetrical services declined significantly with 7% of hospitals surveyed in 2004 dropping or limiting these services. Declines in these services are consistent with the experience of other rural hospitals (Coburn, Loux, and Bolda forthcoming). However, at least 20% of all hospitals added or expanded radiology, specialty clinics, outpatient rehabilitation and laboratory services. Other services commonly added or expanded included outpatient surgery, swing beds, inpatient rehabilitation, and rural health clinics.

Table 2

Reasons for Adding or Expanding Services in Critical Access Hospitals, 2004 (N=474)¹

	# of Hospitals that Added or Expanded Service	Reason for Change ²			
		Community Need	Staff Availability	Increase Revenue	Quality Improvement
Service		% (n)	% (n)	% (n)	% (n)
Inpatient Rehab	65	57 (37)	39 (25)	3 (2)	5 (3)
Urgent Care	27	59 (16)	37 (10)	0 (0)	7 (2)
Outpatient Psych	30	67 (20)	33 (10)	7 (2)	0 (0)
Outpatient Rehab	100	49 (49)	39 (39)	8 (8)	7 (7)
Specialty Clinics	121	49 (59)	33 (40)	9 (11)	2 (2)
Radiology	189	26 (50)	23 (43)	8 (16)	16 (31)
Laboratory	95	30 (28)	5 (5)	22 (21)	17 (16)
SNF	16	31 (5)	0 (0)	6 (1)	13 (2)
Home Health	20	55 (11)	10 (2)	5 (1)	0 (0)
Assisted Living	19	79 (15)	0 (0)	16 (3)	0 (0)
Hospice	15	73 (11)	0 (0)	7 (1)	0 (0)
Inpatient Surgery	30	13 (4)	80 (24)	3 (1)	3 (1)
OB	20	30 (6)	60 (12)	5 (1)	15 (3)
ER	66	30 (20)	41 (27)	6 (4)	18 (12)
EMS	20	30 (6)	40 (8)	5 (1)	20 (4)
Outpatient Surgery	80	23 (18)	49 (39)	13 (10)	8 (6)
RHC	66	30 (20)	11 (7)	35 (23)	5 (3)
Swing Bed	74	23 (17)	1 (1)	38 (28)	5 (4)
Pharmacy	51	24 (12)	25 (13)	6 (3)	33 (17)

¹ Hospitals converting after May 1, 2001 were asked why the service had changed since conversion. However, hospitals converting prior to May 1, 2001 were asked why the service had changed in the last two years.

² Due to missing values, the total number of responses may not equal the number of hospitals who added or expanded the service. In addition, some respondents provided more than one response. Therefore, the reasons for changes in some services may be greater than the total number of hospitals adding or expanding these services. **Shaded cells indicate most common reason for expansion of that service.**

To better understand these changes, we examined why these services were added or expanded. An open-ended survey question asked respondents to identify the most important reason for each change in services. These reasons were then grouped into four categories, as shown in Table 2: 1) to address community need, 2) due to the availability of additional staff, 3) to increase hospital revenue, and 4) to improve the quality of services provided. For over half of the services, the majority of hospitals cited community need as the main reason for adding or

expanding services. Not surprisingly, inpatient and outpatient surgery and obstetrics were added or expanded due to the hospital's ability to recruit staff. Increasing hospital revenue was the most common reason for only two services (rural health clinics and swing beds), while improving quality was the most common reason for only one service, pharmacy.

For key service changes, open-ended responses were reviewed to determine the type of service expansions or additions that were made. The types of changes fell into three main categories: 1) addition of new staff or procedures, 2) the expansion or renovation of facilities, and 3) the addition of new or upgraded equipment (Table 3). Often, service expansions or additions included more than one type of change for that service (e.g. both staff and equipment). Therefore, the percentage represents the percentage of responses for that service and not the percentage of hospitals surveyed. For inpatient and outpatient surgery and rehabilitation services, the most common type of change was the addition of staff and/or procedures performed. Among hospitals adding new staff or procedures, hospitals typically reported adding general surgeons (16%), orthopedic surgeons (11%), ophthalmologists (5%), and gastroenterologists (2%). Of the 40 hospitals adding new procedures, 9 hospitals added endoscopy, 7 colonoscopy, and 8 cataract surgery as new outpatient procedures. For both inpatient and outpatient rehabilitation services, hospitals often added physical, occupational or speech therapists to their staff. As expected, the most frequent changes in radiology and laboratory services were the addition of new equipment. For radiology services, hospitals were most likely to add or upgrade CT scanners (32%), MRIs (14%), ultrasound (11%), and teleradiology (11%). In addition, 20 hospitals (7%) also reported changing from film to digital radiology in order to improve the speed and quality of diagnostic tests. Finally, we explored the

types of changes to specialty clinics (not shown in Table 3). Many hospitals added or expanded cardiology (26%), orthopedics (23%), podiatry (18%), and obstetric/gynecologic (18%) clinics.

Table 3
Type of Service Changes by Hospitals, 2004 (N=474)³

Service	Total # Hospitals Responding	Addition of Staff/Procedures		Facility Expansion/Renovations		Upgraded/New Equipment	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Inpatient Surgery	36	23	64.8	5	13.9	3	8.3
Inpatient Rehab	60	51	85.0	6	10.0	3	5.0
Outpatient Surgery	91	60	65.9	18	19.8	13	14.3
Outpatient Rehab	99	65	65.7	28	28.3	6	6.1
Radiology	277	4	1.4	0	0.0	274	98.6
Laboratory	74	22	29.7	10	13.5	42	56.8

³ Shaded cells represent the most common type of change made to that service.

Given the significant level of expansion for certain services, we investigated to what extent these services had been expanded by CAHs over time, as indicated by the three years of the survey (2000, 2002, 2004). First, we identified the number and percentage of hospitals reportedly expanding these services at least once during the three survey years. The findings are shown in Table 4. Although at least one quarter of hospitals expanded the five services studied at least once, radiology and specialty clinics were the most common expansions. Nearly half of all hospitals surveyed had expanded radiology at least once, while over one third expanded specialty clinics at least once during the three years.

Table 4
Number & Percentage of CAHs Expanding Specific Services at Least Once, Surveys 2000, 2002, 2004 (N=540)

Service	Expanded at Least Once	
	<i>n</i>	%
Laboratory	170	31.5
Radiology	260	48.2
Specialty Clinics	190	35.2
Outpatient Surgery	129	23.9
Outpatient Rehab	166	30.7

Next, we examined whether CAHs had expanded these services more than once during the survey years to determine if these services were being expanded repeatedly (Table 5). Of those hospitals participating in multiple years of the survey, approximately 18% of hospitals expanded radiology more than once, while nearly 14% expanded specialty clinics in more than one year. For the remaining three services, less than 10% of hospitals surveyed expanded these services more than once.

Table 5
Number & Percentage of CAHs Expanding Specific Services More Than Once, Surveys 2000, 2002, 2004 (N=241)

Service	Expanded More Than Once	
	<i>n</i>	%
Laboratory	18	7.5
Radiology	44	18.3
Specialty Clinics	33	13.7
Outpatient Surgery	17	7.1
Outpatient Rehab	24	10.0

How frequently do CAHs perform inpatient and outpatient surgeries?

As reported above, a number of CAHs have expanded surgical services at some point over the period covered by our three surveys, especially outpatient surgery. In the 2000 survey, and again in 2004, we asked CAH administrators how many surgical procedures were performed at their hospitals over the past year, both inpatient and outpatient. When we investigated inpatient surgical volume in 2000, we found that nearly equal numbers of hospitals increased their volume by more than 10% (n=19, or 35%) or had no change in surgical volume (n=21, or 39%). However, for outpatient surgical volume, we found that half of the 90 hospitals with outpatient surgery had increased their surgical volume by more than 10%, while few hospitals decreased their volume by more than 10% (n=14, or 16%). Of the 218 hospitals surveyed in 2000, 134 were resurveyed in 2004. For these hospitals, 54 offered inpatient surgery and 90

outpatient surgery. For these hospitals, we examined actual changes in surgical volume from 2000 to 2004. The 2000 survey asked for volume during the year preceding CAH conversion and also for the year following conversion. Table 6 presents average surgery volume, inpatient and outpatient, for those two observations, as well as for the 2004 survey. Note that inpatient surgery has not changed significantly during this period, but outpatient surgery has risen steadily.

Table 6
Average Annual Number of Surgical Procedures in Critical Access Hospitals
Performing Surgery

	Pre-conversion, 2000	Post-conversion, 2000	2004
Inpatient procedures (n=54 hospitals)	58.3	71.0	60.0
Outpatient procedures (n=90 hospitals)	177.4	240.7	263.0

Taking another view of increases in surgical volume, we counted the number of hospitals that increased volume by 10% or more. For the 90 hospitals performing outpatient surgery in both survey years, 77 hospitals (86%) had substantial changes in volume, with nearly equal numbers increasing and decreasing volume. Forty hospitals (44%) increased outpatient surgical volume by more than 10% between 2000 (post conversion) and 2004, while 37 (41%) *decreased* volume by more than 10%. This volatility may be explained, at least in part, by additions and losses of medical staff. As noted in Table 3, approximately two-thirds of hospitals reporting increases in outpatient surgery on the 2004 survey attributed those increases to the addition of staff and/or procedures.

Table 7
Number & Percentage of Hospitals With & Without Organizational Linkages
That Added or Expanded Services, Survey 2004 (N=474)

Added or Expanded Service	With Linkage (N=336)		Without Linkage (N=138)	
	<i>n</i>	%	<i>n</i>	%
Inpatient Surgery	21	6%	9	7%
Obstetrics	14	4%	6	4%
Outpatient Surgery	57	17%	23	17%
Outpatient Rehab	71	21%	29	21%
Specialty Clinics	92	29%	29	21%
Radiology	137	41%	52	38%
Laboratory	73	22%	22	16%
Pharmacy	41	12%	10	7%

How have organizational linkages impacted changes in services offered?

With CAHs being both small in size and located in rural areas, they often lack the patient volume and financial resources to effectively recruit and retain staff, especially specialists, and to obtain and regularly update equipment needed for laboratory, pharmacy and radiology. By establishing linkages with other health care organizations, CAHs may be better able to meet these needs.

Based on this theory, hospitals with organizational linkages may be more likely to add or expand services that depend on specialists (e.g., surgery, obstetrics, pharmacy, and specialty clinics) or on equipment (e.g., laboratory and radiology). To test this theory, we examined the impact of organizational linkages (network or system membership) and mutual agreements for specialty services on the addition or expansion of services dependent on specialists and/or equipment. We found that hospitals with and without organizational linkages did not differ on whether they added or expanded these types of services (See Table 7 above). However, as shown in Table 8, a mutual agreement for specialty services with another health care organization had a significant impact on the addition or expansion of specialty clinics. CAHs having such an agreement were significantly more likely to have added or expanded specialty clinics ($\chi^2 = 12.07$, $p < .001$).

Table 8**Number & Percentage of Hospitals With & Without Mutual Agreements for Specialty Services That Added or Expanded Services, Survey 2004 (N=474)**

Added or Expanded Service	With Agreement (N=279)		Without Agreement (N=193)	
	<i>n</i>	%	<i>n</i>	%
Inpatient Surgery	18	7%	11	6%
Obstetrics	12	4%	8	4%
Outpatient Surgery	54	19%	25	13%
Outpatient Rehab	64	23%	36	19%
Specialty Clinics	88	32%	33	17%
Radiology	62	22%	31	16%
Pharmacy	36	13%	14	7%

Shaded row is significant at $p < .001$

CONCLUSIONS

Consistent with our findings in previous surveys, conversion to CAH status has not led to downsizing of services, as might have been expected with the licensed bed and length of stay limitations associated with conversion. Although the core services offered by CAHs have remained relatively unchanged over time, we discovered that many CAHs have added or expanded services that are not dependent on inpatient capacity, including radiology, specialty clinics, laboratory services, outpatient surgery, and outpatient rehab. In 2004, approximately 20% of hospital administrators reported adding or expanding these services since conversion or in the last two years, while one quarter of 540 hospitals surveyed during the three surveys had added or expanded these services at least once. Some hospitals have continued to expand these services, with at least 10% having expanded outpatient rehab, specialty clinics and radiology more than once. For radiology, laboratory services, specialty clinics and outpatient rehab, hospital administrators viewed the addition or expansion of these services as a response to community need. On the other hand, the availability of staff for outpatient surgery was the most common reason for adding or expanding this service. In fact, although we found an increase in

the volume of outpatient surgical procedures over the four year period, the numbers of hospitals reporting significant increases was no greater than the number reporting decreases. These fluctuations in surgery volume appear to be related to the availability of staff.

Although we lack 2000 and 2002 survey data on why services were added or expanded, qualitative findings from 2000 and survey findings from 2004 provide some support for the “hierarchy of needs” hypothesis. Site visits and interviews with hospital administrators conducted in 2000 suggest that, at that time, administrators viewed the Flex Program primarily as an opportunity for revenue enhancement. In the 2004 survey, we directly asked administrators why they had added or expanded services. The most frequent reason for adding or expanding 11 of the 20 services was addressing community need, while administrators most commonly reported increasing revenue as a reason for adding or expanding services for only 2 of the 20 services studied. While far from conclusive this finding may offer some support for the theory that the reasons for adding or expanding services have broadened from a revenue-enhancement tactic toward a strategy of community benefit.

Finally, since we have previously found that hospitals linked with other healthcare organizations were more likely to add or expand staff and equipment intensive services, we also explored the impact of organizational linkages on changes in these services. In the 2004 survey, we found no significant relationship between hospital system membership or network affiliation and increases in the scope of these services. However, not surprisingly, our findings show that hospitals with an agreement or memorandum of understanding with another organization for specialty services were more likely to add or expand specialty clinics.

These observed increases in outpatient services are consistent with the move from in-patient to out-patient services observed at larger hospitals, both urban and rural, over the past 20

years (Cotterill & Gage 2002, TASC 2005, Bureau of Labor Statistics 2005). We see no direct evidence that the Flex program has accelerated this transition, although the improved financial strength afforded by cost-based reimbursement may have been a factor in some service expansions. That CAH administrators have begun to see these service expansions as responses to community need may support our hypothesis that CAH status has enabled and encouraged these executives and their boards to place more emphasis on community engagement in their strategic planning and strategic management than they have in the past.

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