



Estimated Costs of Rural Freestanding Emergency Departments

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OVERVIEW

Since 2005, more than 100 rural hospitals have closed and more are at risk.^{1,2} Rural hospital closures jeopardize access to emergency services in the affected communities. As communities react to and/or prepare for closures, providers and policy makers seek a viable alternative for emergency services provided in a rural hospital setting. A rural freestanding emergency department (RFED) is one potential model for providing emergency services in areas where hospitals have closed. To inform the current policy discussion around RFEDs, this brief explains the concept of an RFED and

estimates the costs of operating an RFED under three different volume scenarios.

KEY FINDINGS

- Rural freestanding emergency departments currently do not receive any rural-specific designation under federal regulations; as such, rural FEDs must take the form of a hospital-owned freestanding emergency department to be eligible for facility fee reimbursement by the Centers for Medicare and Medicaid Services.
- The annual total cost to operate a low, medium, and high volume RFED is estimated to be \$5.5, \$8.8 and \$12.5 million, respectively. The average visit cost per patient declines with greater volume (\$600, \$370 and \$347 for low, medium and high volume RFEDs, respectively).
- Low patient volumes, high rates of uninsured patients, minimum staffing requirements, provider shortages, federal reimbursement policies, and other rural factors must be considered in assessing the financial viability of an RFED.

BACKGROUND

Freestanding Emergency Departments (FEDs)

A FED is a facility licensed by the state to provide emergency services and is physically separate from a hospital.³ It provides the same level of access and care as a hospital-based emergency department, except for trauma services, which are provided through transfer agreements between a FED and an area hospital(s). FEDs differ from urgent-care facilities because they are required to be open 24 hours a day, have physicians on-site at all times, provide round-the-clock lab and imaging services, stock medications not required in urgent-care centers, fulfill specific architectural and equipment requirements, and train staff at a higher level than that required of urgent-care centers.^{3,4} In addition to emergency services, FEDs provide outpatient services such as lab and imaging services.⁵

FEDs are either hospital-owned or independent from a hospital, which affects federal regulation, state licensure, and reimbursement.⁶ Most FEDs

are owned by a hospital and are recognized by the Centers for Medicare and Medicaid Services (CMS) as part of the parent hospital, subjecting them to the same regulations and billing practices as the parent hospital.⁷ Hospital-owned FEDs can bill facility fees under the parent hospital's Tax ID.^{4,6} Independent FEDs are owned by individuals or organizations other than hospitals and are not recognized by CMS as emergency departments. Thus, they are not subject to CMS regulations as emergency departments and are ineligible to receive a CMS facility fee.^{6,8} Licensing authority for both types of facilities is left to states and varies significantly. For example, California does not license any FEDs, whereas Texas recognizes both hospital-owned and independent FEDs.^{4,9} Therefore, differences in hospital ownership of an FED can have important implications with regard to CMS and state-specific regulations.

Rural Freestanding Emergency Departments (RFEDs)

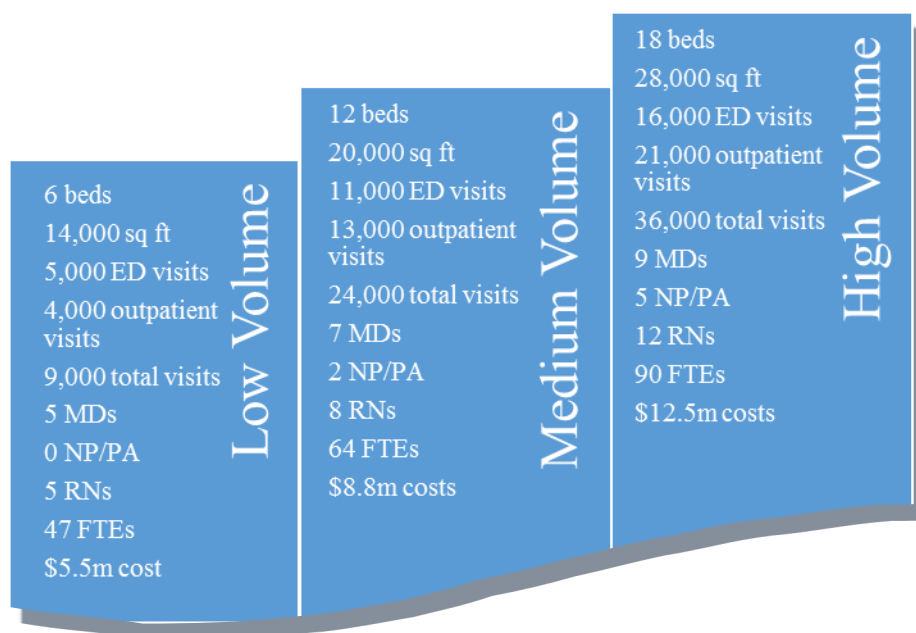
Currently, there is not a rural-specific federal designation for FEDs in rural areas. Freestanding emergency departments operating in rural areas are either a hospital-owned or independent FED operating at a rural location. Like rural hospitals, rural FEDs typically serve lower patient volumes who are sicker, older, and more likely to be uninsured than those in non-rural FEDs.¹⁰ Rural FEDs are also more likely to face challenges maintaining minimum staffing requirements, experience higher fixed costs than non-rural facilities, and have longer transfer times. Many of the challenges faced by rural hospitals are also the primary hurdles for establishing a financially viable rural FED.

To address some of these challenges, the Rural Emergency Acute Care Hospital (REACH) Act, S.1648, introduced in June 2015 proposes Medicare recognize independent RFEDs as a new facility type, allowing for facility fee reimbursement. Further, it proposes enhanced reimbursement for services at 110% of reasonable cost. At the state level, the Georgia Department of Community Health recently approved new rules to govern RFEDs. Mississippi is also piloting a program for hospital-owned RFEDs and will assess the impact on access and wait times. While policy support is building for RFEDs as a possible solution for providing emergency services in areas where hospitals have closed, the financial viability of this service delivery model is largely unknown. In the remainder of this brief, therefore, we estimate the costs to operate an RFED under various assumptions.

METHODS

Three RFED models based on annual emergency patient volume, outpatient volume, and facility square footage were developed (Figure 1). Because national data on emergency department utilization and costs are not publicly available, a variety of public and proprietary data sources were used in this analysis. Data sources included: Medicare cost report data and proprietary emergency department data for 18 Critical Access Hospitals (CAHs) in North Carolina; emergency department space recommendations from the American College of Emergency Physicians; interviews with key stakeholders; and detailed hospital financial statements for three hospitals. Throughout the development phase, models were reviewed with managerial and clinical advisers from one CAH, two rural Prospective Payment System (PPS) hospitals, one urban FED, one rural FED, and policy makers from two state offices of rural health. Models were tested against financial information included in Certificate of Need (CON) applications for a rural PPS hospital and an FED, as well as proprietary data for a rural PPS hospital. Cost estimates were created with an Excel-based tool called the Freestanding Emergency Department Financial Assessment Strategic Tool (FED FAST). For further details of the FED FAST tool, see Appendix 1 or visit (<http://www.shepscenter.unc.edu/programs-projects/rural-health/tools/>). FED FAST allows the user to customize model inputs (e.g., capital costs, wages, staffing) specific to their circumstances, but for illustration here we include specific inputs drawn from North Carolina.

Figure 1: Three Models of Rural Freestanding Emergency Departments



Emergency patient visits. Eighteen CAHs in North Carolina were grouped based on annual emergency patient volume: low volume (<6,000 emergency visits), medium (6,000-15,000 emergency visits), and high (>15,000 emergency visits) and the mean visits of each group was used as the basis for each volume model (5,341, 10,607, and 15,491 emergency patient visits, respectively).

Outpatient visits. An RFED may offer non-emergency outpatient visits. We estimated the relationship between (non-emergency) outpatient visits and ED visits from publicly available CON information for one FED and for one rural PPS hospital in North Carolina. This relationship was reviewed with technical advisers and revised based on their feedback. The estimated number of outpatient visits was calculated by multiplying the mean emergency visits by 75% for the low volume model, 125% for the medium volume, and 133% for the high volume (4,006, 13,259, and 20,603 outpatient visits, respectively).

Staffing complement and cost. Initial staffing estimates were reviewed with technical advisers. Revisions were made based on North Carolina regulatory requirements and actual staffing practices in the technical adviser's organizations (Table 1). For example, FEDs are required to have at least one physician and one nurse on-site at all times, regardless of patient volume (this level of staffing is more strict than the current Condition of Participation for CAHs).¹¹ The medium and high volume models assumed midlevel providers (NPs/PAs) and other clinical staff (CNAs/EMTs) can be

substituted for physicians and RNs (provided one physician and one RN is always on staff), respectively. The revised staffing estimates were compared to the staffing in the publicly available CON information for one FED and one rural PPS hospital in North Carolina. Further revisions were made to reflect a realistic relationship between patient volume and the staffing number. Salary estimates were obtained from online searches and data from the publicly available CON information for one FED and one rural PPS hospital in North Carolina. Base salaries of \$280,000 for an MD, \$89,000 for a PA/NP, and \$54,900 for an RN plus 22.4% for staff benefits were included in the model.

The staffing complement for each model is an estimate only – actual staffing would depend upon any legislative changes and local circumstances. For example:

- If RFEDs were allowed to staff at the levels stated in the current Condition of Participation for CAHs, then fewer staff and lower costs would be possible.
- It may be possible to contract out some services to other hospitals or companies, at possibly lower cost.
- In many small communities, health care providers are accustomed to “wearing many hats” to leverage scarce resources and to retain local services. For example, a physician in a privately owned clinic may also be the RFED director and the supervising physician for the physician assistants. A community pharmacist may also be the consultant pharmacist for the RFED for perhaps only 0.2 FTE. This type of staff sharing may lower cost and provide a viable way to staff very small RFEDs.

Table 1: Estimated Staffing Complement of an RFED

	Low Volume	Medium Volume	High Volume
Administration			
<i>Emergency Services Director</i>	1.0	1.0	1.0
<i>Charge Nurse – ED</i>	0.2	1.0	1.0
Clinical Providers			
<i>MD</i>	4.7	7.0	9.4
<i>NP/PA</i>	0.0	2.4	4.7
Clinical Support			
<i>RN</i>	4.7	7.0	10.5
<i>CNA/EMT</i>	2.4	4.7	7.0
<i>Unit Coordinator</i>	0.0	2.4	3.6
<i>Ultrasound Tech</i>	2.4	2.4	4.7
<i>CT / X-Ray Tech</i>	4.7	4.7	4.7
<i>Med Lab Tech</i>	4.7	4.7	4.7
<i>Respiratory Therapist</i>	2.4	2.4	4.7
<i>Social Worker</i>	0.0	0.5	1.0
<i>Pharmacist</i>	0.6	0.8	1.0
Nonclinical Support			
<i>Patient Registrar</i>	2.4	2.4	4.7
<i>Clinical Admin Coordinator</i>	1.0	1.0	1.5
<i>Patient Account Rep</i>	2.4	2.4	3.6
<i>HR/Credentialing/Recruiting</i>	2.0	3.0	4.0
<i>Business/Payroll</i>	1.0	1.0	1.5
<i>Billing/Medical Records</i>	2.4	4.7	7.1
<i>Security Officer</i>	4.7	4.7	4.7
<i>Property Superintendent</i>	1.0	1.0	1.0
<i>Facilities Staff</i>	2.4	2.4	3.6
Total FTEs	47.1	63.6	89.7

Non-labor costs. Non-labor operating costs included emergency patient and outpatient costs for medical/surgical supplies, dietary, marketing, information technology (IT) support, billing, security, medical records, other non-employed contract labor, transport, travel, and continuing education. Non-labor costs were estimated from the publicly available CON information for one FED and one rural PPS hospital in North Carolina.

Facility costs. The range of bed sizes selected in our model is based on comparisons with current ED models and the experience of our technical advisors. A six bed facility was deemed the smallest possible functional freestanding ED, and an 18 bed facility was comparable to larger CAH EDs. Recommendations from the American College of Emergency Physicians for hospital-based EDs and actual experience in recently designed FEDs were used to estimate facility square footage and costs.¹² RFEDs are larger than hospital-based EDs because administrative, facility, and outpatient space cannot be shared with other hospital departments, as is the case in hospital-based EDs. This requirement for space disproportionately impacts low volume RFEDs: the square feet per ED bed is greater in low volume RFEDs compared to medium and high volume RFEDs (2,333, 1667, and 1,527, respectively). Facility costs included a fixed cost based on square feet and a variable cost based on patient volumes, both of which were obtained from publicly available CON information for one FED and one CAH in North Carolina.

Capital costs. Capital costs assumed the typical RFED is a conversion of an existing, functioning CAH facility requiring minimal renovations and using functional capital equipment already in place. An initial investment of converting a CAH to an RFED (amortized over 15 years) and annual capital costs were estimated from technical adviser advice and comparison to capital costs in the publicly available CON information for one FED and one CAH in North Carolina.

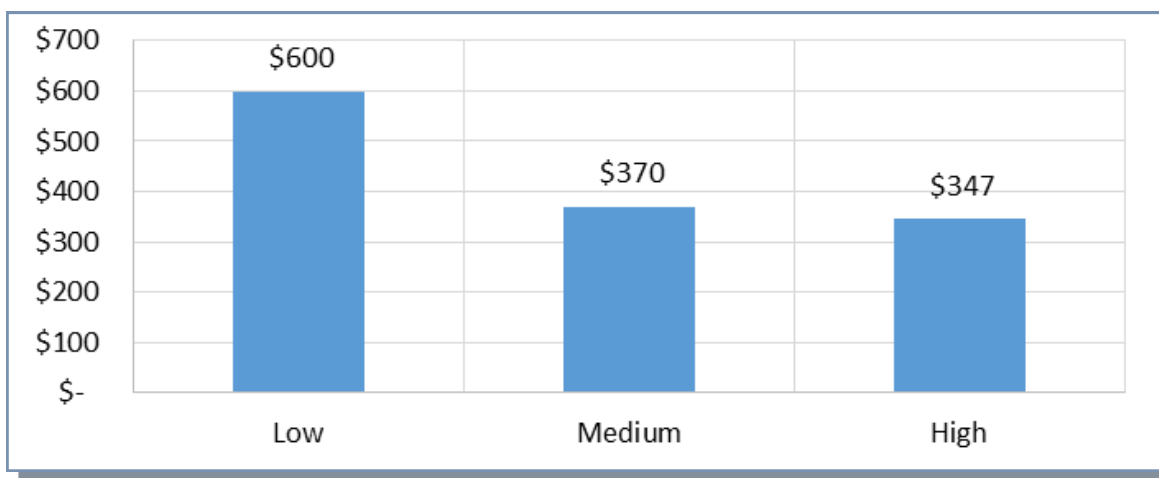
RESULTS

Table 2 shows the annual total cost to operate an RFED is estimated to be \$5.5, \$8.8 and \$12.5 million for the low, medium, and high volume models, respectively.

Figure 2 shows the average cost per emergency/outpatient visit for each of the three models. The low volume model average cost per patient visit is nearly twice as high as the medium and high volume models (\$600 versus \$370 and \$347, respectively). The high cost per visit in each of these models highlights the challenges affecting low volume facilities in rural areas seeking to provide emergency services.

Table 2: Estimated Annual Cost of an RFED			
	Low Volume	Medium Volume	High Volume
Operating Cost	\$5,395,271	\$8,580,951	\$12,140,500
Staffing Costs	\$4,022,876	\$5,705,112	\$7,903,975
Administration	\$154,691	\$235,298	\$235,298
Clinical Providers	\$1,610,784	\$2,660,501	\$3,733,596
Clinical Support	\$1,417,390	\$1,808,817	\$2,540,614
Non-clinical Support	\$840,011	\$1,000,496	\$1,394,467
Non-labor Costs	\$1,176,355	\$2,564,242	\$3,798,238
Facility Costs	\$196,040	\$311,596	\$438,287
Capital Cost	\$130,855	\$259,872	\$379,530
Total Annual Cost	\$5,526,126	\$8,840,822	\$12,520,029

Figure 2: Average Cost per Patient Visit (Outpatient and ED)



CONCLUSION

FEDs are a growing trend. Most are located in highly populated areas, have a favorable payer mix, and are owned by a hospital. In contrast, lower patient volumes and unfavorable payer mix make RFED ownership less appealing to hospitals. Without hospital ownership, RFEDs are essentially unsustainable because they do not have access to CMS facility fee reimbursement. Analysis of the 2013 Medical Expenditure Panel Survey indicates the average total payment for an emergency room visit by someone insured by Medicare was about \$763 for the facility fee and \$149 for the professional fee. This is sufficient to cover the average costs presented in Figure 1 only if the RFED can collect the facility fee, which as mentioned before, it generally cannot under current regulations. For this reason, several changes to current regulations have been proposed, including enhanced Medicare reimbursement and allowing independent RFEDs to bill facility fees as proposed in the REACH Act. However, low patient volumes, high rates of uninsured patients, minimum staffing requirements, recruiting issues, and necessary fixed costs may all still hamper an RFED's financial sustainability. Future research should explore how communities can operate a financially viable RFED in the context of these challenges and payment mechanisms that might sustain new models of care.

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Appendix 1: FED FAST Tool



- ▲ The FED FAST is an Excel-based tool developed to assess the financial feasibility of converting a rural hospital into a freestanding emergency department.
- ▲ Feasibility is measured by net present value (NPV), internal rate of return (IRR), modified rate of return (MIRR), and payback period.
- ▲ Pro forma financials are generated after entering user-specific inputs including: number of ED and outpatient visits, amount of square footage, number of ED beds, average charges, payer mix, and capital and operating costs.
- ▲ The FED FAST model can be downloaded from: <http://www.shepscenter.unc.edu/programs-projects/rural-health/tools/>

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