

**The Frontier Extended Stay Clinic Concept
A Review of Relevant Published Literature**

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Introduction

This is an update to the initial draft review of the relevant published literature (March, 2006), the original document follows this update. This update presents the results of structured literature searches conducted using the same parameters as the original review but for the time period December 2005 through December 2006.

The searches yielded 17 articles that were considered relevant enough for abstract review, of these 8 merited closer examination. These 8 were classified into three categories, those that had low, questionable, or high relevance to the review. They are listed below.

Articles Reviewed and Determined to Have Low Relevance, n=2

Galli, Robert (2006). Innovation possibilities for prehospital providers. *Prehospital Emergency Care*, 10(3): 317-319.

Keks, Nicholas and Grant Blashki (2006). The acutely psychotic patient; assessment and initial management. *Australian Family Physician* 35(3): 90-94.

Articles Reviewed of Questionable Relevance, n= 2

Andersson, Anna-Karin; Omberg, Monica; and Marianne Svedlund (2006). Triage in the emergency department – a qualitative study of the factors which nurses consider when making decisions. *Nursing in Critical Care*, 11(3): 136-145.

Hays, RB; Veitch, C; and R Evans (2005). The determinants of quality in procedural rural medical care. *Rural and Remote Health*, 5(473): online.

Articles Identified as Relevant and Substantial, n=4

Salomone, Jeffrey (2006). Prehospital Triage of Trauma Patients: a trauma surgeon's perspective. *Prehospital Emergency Care*, 10(3): 311-313.

In this article a trauma surgeon briefly reviews the history of the development of trauma centers, comments on under-triage (when major trauma patients are not transported to a trauma center) and over-triage (when minimally injured patients are transferred to a trauma center), and defines the components of an ideal prehospital triage system. The author briefly touches on the question "What if no trauma center exists in a rural area?" and concludes "...the best decision for a given patient depends on the patient's specific

injuries, the hospital resources, geography, weather, and length and mode of transport available.” He concludes, “The best system for a given community or region is one that begins with a triage scheme that is evidence based to the greatest extent possible but is then modified based on community or regional resources and geography.

Reviewers’ comments: The need to have prehospital services customized to a region’s resources and geography is supportive of the FESC concept.

Stamp, G; Miller, D; Coleman, H; Milera, A; and J Taylor (2006). They get a bit funny about going – transfer issues for rural and remote Australian Aboriginal people. *Rural and Remote Health*, 6(536): online.

As part of a larger 2004 study, this paper examines issues faced by Aboriginal peoples living in rural and remote communities when they travel away from their communities to receive hospital care. Issues identified as causing stress and discomfort included: cost of transport, extra costs to family members, antisocial arrival times, separation from family, transport to hospital, and accommodation issues. Potentially dangerous misunderstandings due to language and cultural differences were also noted.

Reviewers’ comments: While focused on the experiences of Australian Aboriginal peoples, this article draws attention to the need for integration of healthcare between providers in remote locations and metropolitan hospitals and the reluctance some rural and remote populations may have to traveling to tertiary hospitals to seek care.

Thommasen, H; Tatlock, J; Elliott, R; Zhang, W; and S Sheps (2006). Review of salaried physician visits in a rural remote community – Bella Coola Valley. *Canadian Journal of Rural Medicine* 11(1): 23-31.

Using retrospective chart reviews, this study quantified visits to three salaried physicians working in a remote health care facility (hospital and clinic share the same complex) in British Columbia during 2001. The community is isolated enough that almost all of the community’s residents have a medical chart at either the clinic or emergency department. 47% of residents are of Aboriginal descent. During the year reviewed, the 2,378 patients made 7,747 family physician visits, 1,736 emergency department visits, 245 were admitted to the hospital, and there were 2,252 prescription visits. The authors found that older people, people with chronic disease, women and Aboriginal peoples more frequently visited the family practice physicians than other groups within the community.

Zeitz, Kathryn; Malone, Geri; Arbon, Paul; and Jenny Fleming (2006). Australian issues in the provision of after-hours primary care medical services in rural communities. *Australian Journal of Rural Health*, 14(3): 99-104.

This article reports on issues related to the provision of after-hours care in rural and remote communities in South Australia. Issues were identified by clinicians over the course of workshops designed to improve communications between rural general practitioners and nurses who provide after-hours triage. Common areas of concern raised in multiple workshops included: (1) community expectations, including the need for clear definition of after-hours services especially emergency versus primary care responses; (2)

systems of care, including practice guidelines, and security for staff; (3) interpreting the nursing scope of practice; (4) private medical practice-hospital interface; and (4) medico-legal implications of service provision in the rural setting. Recommendations centered on obtaining governmental support to address the issues at the State Departments of Health and to expand training opportunities.

Reviewers' comments: This article speaks to the role community expectations play in the types of after-hours care provided and the need for clear definitions of different types of care (i.e. FESC versus emergency versus primary care). The theme of on-going training for clinical staff working in rural/remote areas is also present in this article.

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Introduction

The Frontier Extended Stay Clinic (FESC) concept is being tested in a demonstration project authorized by the Congress and funded by the Office of Rural Health Policy (ORHP) in the US Department of Health and Human Services. This literature review covers the essential background documents that describe that demonstration as well as the published literature that explores key elements of the concept.

Unpublished Policy Documents

This review focuses on the published literature but also covers unpublished materials in the form of reports or policy documents that have relevance to the demonstration of FESC. For example, the federal Office of Rural Health Policy (ORHP) commissioned a paper that summarizes the concept and its legislative history and related demonstrations of new provider types specific to rural populations. That paper, “A General Introduction to the Frontier Extended Stay Clinic” by Christy Machida (June 13, 2003) stated that “One of the most pressing health care issues in frontier health is the pervasive practice of non-reimbursed extended stay primary care (ESPC).” That statement sets the context for the FESC demonstration identifying financial issues as a key element. The review also provides a useful legislative history of the two current demonstrations, one funded via the Health Resources and Services Administration (HRSA) and another by the Centers for Medicare and Medicaid Services (CMS), both mandated by the Medicare Prescription Drug Improvement and Modernization Act of 2003 (MMA). The Machida review is available only in manuscript form as it was never formally distributed.

A Needs Assessment sponsored jointly by the Denali Commission, the Alaska Native Tribal Health Consortium, the Indian Health Service and the State of Alaska Department of Health and Social Services, was presented in 2000 and found that 51% of 186 frontier clinics have kept patients for extended stays. That Needs Assessment was also distributed in the form of a presentation and not formally published. The Frontier Education Center distributed a review of “Extended Stay Primary Care” in June of 2000 and identified state legislation in Colorado, New York and Washington that provided for some form of recognition of extended stays in primary care settings. The review also highlighted S1342 (105th Congress), the Medicare Frontier Health Clinic and Center Act of 1997, that sought to allow clinics to participate in the Rural Hospital Flexibility Act program, that created Critical Access Hospitals as a provider type and supported rural health systems. The Congress did include language in earlier reports for the Department of Health and Human Services to study the feasibility of supporting extended stay services in clinics. This legislative history is detailed in more depth in the Machida

report. These two documents deal with the implementation of FESC policy and are provide invaluable background information specific to the program.

Since the passage of the MMA and the subsequent implementation of the FESC demonstration by the ORHP, the history of the program has been essentially written in the program guidance for the demonstration as issued by the ORHP and in applications for funding submitted in response to that announcement. Those documents are available from the agency and from the applicants on request. The former being public documents and the latter subject to review prior to release.

Review of the Published Literature.

The documents that summarize the evolution of the FESC concept focus on practical policy changes and the ability of clinics to meet the needs of beneficiaries and their patient populations. They have reflected, to some degree, on what has been reported in the peer-reviewed literature but have not systematically examined what has been published. This review is intended to fill that gap.

The review of the literature relevant to the evaluation of the Frontier Extended Stay Clinic concept focused on two important elements that are being demonstrated under grants from the federal Office of Rural Health Policy. These fall under the headings of “Models of Care” and “Financing and Costs.”

The FESC concept represents a new type of caregiving entity that combines elements of the outpatient primary care clinic; the inpatient acute care facility, and the emergency room. The current demonstration project seeks to show that this combination can be effective in caring for much of the acute care and emergency health care needs of populations in isolated communities. Thus, the demonstration focus on a new “model” of care. We sought to identify similar descriptions of such models that combined the characteristics of the FESC demonstration. Key to the institutionalization of the FESC model is recognition by the Centers for Medicare and Medicaid Services of FESC as a new “Provider Type.” The term “Provider Type” is used by the CMS to classify the entities which are paid via the Medicare and Medicaid programs for services provided to beneficiaries. Examples of the 16 general provider types include: hospitals, Rural Health Clinics, Skilled Nursing Facilities, physicians, and pharmacists. There are different variations under each general provider type. The CMS develops, either through internal policy or Congressional guidance, payment policies and conditions of participation for each provider type. Thus, the financial characteristics of entities similar to FESC need to be reviewed to provide background for the evaluation.

The identification of the relevant literature included a review of the policy documents made available by the Office of Rural Health Policy and cooperating agencies in Alaska including the Southeast Alaska Regional Health Consortium and the Alaska Center for Rural Health. Other policy documents were identified through searches of the Sheps Center’s “Rural Policy File” which is a collection of unpublished documents relating to rural health policy collected since 1968 and housed in the Sheps Center (see: www.schsr.unc.edu/library/ for further information and access to those listings). We also

conducted structured literature searches using the PubMed and other National Library of Medicine indexes. The search strategy described below was used with PubMed. Preliminary searches on other indexes, CINAHL, ERIC and JSTOR identified only duplicate material. The search strategy was split into the two key areas and followed these logics:

Models of Care – Keywords Searched (In sequential combination with remote, rural (health), and frontier): Outpatient setting/care, emergency (medical services, medicine, services), clinic, urgent care, freestanding emergency department, observation unit, isolated communities, geographic isolation, and pre-hospital care. A combination of Rural Health and Emergency (services, care, or medicine) yielded 197 references, 47 of those were not in English. Some attention was paid to articles in Russian because of the similarity with conditions in Alaska, none were considered relevant enough to review.

Financing & Cost – Keywords Searched (In combination with rural health and emergency): Financial viability, cost finding, cost of care, urgent, and hospital. Rural Health and Costs yielded 298 references.

The selection of articles for review was done in two steps. Articles with titles that appeared to be relevant were retrieved and the abstracts read by one of the two authors. From that review, a subset of articles were read in full. Of the examined articles, those that included information that was directly relevant to rural settings or to innovative models of primary care or the care of emergency patients in primary care settings were retained and summarized below. Each of the reviewers could determine that any article was relevant, thus the listing is more expansive than if both reviewers had to agree.

The computer searching algorithms yielded 78 articles that were considered relevant for abstract review. Of those 78, 29 merited closer examination. The 29 were classified into three categories, those that had low, questionable, or high relevance to the review. They are listed below.

Articles Reviewed and Determined to Have Low Relevance, n=15

Croser, John (2003). Trauma care systems in Australia. *Injury: International Journal of the Care of the Injured*; 34: 649-651.

Hauswald, Mark; Raynovich, William; and Andy Brainard (2005). Expanded emergency services; the failure of an experimental community health program. *Prehospital Emergency Care*; 9: 250-253.

Johnson, Nancy (1983). A first response system, rural style. *JEMS*; August: 38-40.

Leonard, Lawrence (2001). Developing an air ambulance services for a remote area of west Texas. *Journal of Healthcare Management*; 46(1): 68-72.

McAtee, Robin and Claudia Beverly (2005). A method for analyzing the financial viability of a rural provider-based geriatric clinic. *Journal of Ambulatory Care Management*; 28(3); 254-259.

- McGrath, Pam (1999). The patient transit assistance scheme: the clerk's perspective. *Australian Journal of Rural Health*; 7: 140-147.
- Menke, Terri; Homan, Rick; and Michael Kashner (1999). Determining costs in VA: research design problems and solutions illustrated with case studies. *Medical Care*; 37(4) Supplement; AS18-AS26.
- Parsons, Robert; Willson, William; and David Youksetter (1985). Applied feasibility analysis for urgent care center. *Journal of Ambulatory Care Management*; 8(4): 18-31.
- Strasser, Roger (2003). Rural health around the world: challenges and solutions. *Family Practice*; 20 (4); 457-463
- Taylor, J. and Susan Braziel (1979). Planning and developing health services for an isolated island. *Journal of Ambulatory Care Management*; November:73-86. (Reviewers' comment: While directly relevant, this article covered conditions and payment systems that are no longer in place)
- Taylor, Judy; Blue, Ian; and Gary Misan (2001). Approach to sustainable primary health care service delivery for rural and remote south Australia. *Australian Journal of Rural Health*; 9: 304-310
- Treese, David (2003). Health care in the borderland. *Perspectives in Biology and Medicine*; 46(4): 567-579.
- Updew, Robert (1987). Free-standing emergency centers and ambulatory surgery centers: evaluating feasibility and assessing impact on hospital operations. *Topics in Health Care Finance*; 13(3): 60-67.
- Wohlauer, Valentin (1967). Emergency medical problems in rural areas. *Rocky Mountain Medical Journal*; August: 43-48.
- Zilm, Frank (1999). Urgent care and the emergency department: providing the right ambulatory care setting. *Journal of Ambulatory Care Management*; 22(1): 1-7.

Articles Reviewed of Questionable Relevance, n=2

- Barnett, Paul (1997). Research without billing data: econometric estimation of patient-specific costs. *Medical Care*; 35(6): 553-563.
- Martin, Brian (2000). Emergency medicine versus primary care: a case study of three prevalent, costly, and non-emergent diagnoses at a community teaching hospital. *Journal of Health Care Finance*; 27(2): 51-65.

Articles Identified as Relevant and Substantial, n=12

- Avery, Sharon (1999). A limited-service rural hospital model: the freestanding emergency department. *Journal of Rural Health*; 15(2): 170-179.

This study looks at the financial feasibility of a rural hospital shutting down acute-care services and maintaining emergency services. Due to the financial, staffing and quality implications of this model it appears that successful implementation of a stand-alone

emergency department will be difficult. Three model categories were investigated: 1) an urgent-care clinic with emergency services; 2) hospital-based emergency department with outpatient clinic; and 3) hospital-based emergency department with an outpatient clinic and hospital based SNF. Even with best case assumptions regarding continued reimbursement, results show only a small increase in net income and in two cases large losses compared with the size of hospital operations. A subsidy would be required from the community or an affiliated hospital or network for the model to remain financially stable. Ensuring quality and proficiency of patient care is a major challenge for isolated facilities with low patient volumes. Barriers to implementing an effective quality assurance program include small medical staffs with few peers to review records, discuss cases and proctor; limited data available to trend or compare outcomes; and lack of funds and resources necessary to maintain a formal quality assurance program. It is important to acknowledge that living in isolated rural areas means accepting some risks that are different from an urban setting. The community needs to play a role in the decisions regarding the availability of certain acute-care services and understand the compromises to quality that may accompany these decisions.

Reviewers' comments: This speaks to the various organizational impediments that face institutions in rural settings as well as the contribution of community input to the decision to change the structure and service offerings of a clinic. The article reflects the realities encountered in the FESC environment.

Edbrooke, D; Stevens, G; Hibbert, C; Mann, A; and A Wilson (1997) A new method of accurately identifying costs of individual patients in intensive care: the initial results. *Intensive Care Medicine*; 23: 645-650.

The patient-related and non-patient-related costs of intensive care were analyzed using an activity-based costing methodology. The use of average costs or scoring systems to cost intensive care is limited, as these methods cannot determine actual resource usage in individual patients. The methodology described allows all the resources used by an individual patient or group of patients to be identified and thus provides a valuable tool for economic evaluations of different treatment modalities. The care delivered to a patient is partitioned into discrete elements termed "activities of care". An activity of care is defined as any patient-related task requiring the use of ICU resources. There are currently over 300 activities of care configured on the system which not only include all the drugs, treatments and major monitoring procedures used on the ICU but which also included the background nursing care and discussions with relatives. Patient care is costed using the activities of care by identifying the resources and therefore costs necessary to deliver each activity. The total patient related cost of care for an individual patient is determined from the sum of the costs of the activities delivered to the patient. An hourly overhead rate is calculated from the sum of the non-patient related costs and the total bed occupancy for the previous financial year, which allows these costs be apportioned to individual patients. Our results obtained from the activity-based methodology show a statistically significant difference in costs obtained depending on which definition of the first day is used [calendar versus 24 hour period].

Reviewers' comments: This describes an approach that may be used to identify “true” costs of FESC patients that would be relevant if there were parallels between the activity in an ICU and the FESC clinics.

Fallon, Michael and Michael Copass (1990). Southeast Alaska to Seattle emergency medical air transports: demographics, stabilization, and outcomes. *Annals of Emergency Medicine*; 19(8); 914-921.

A retrospective chart review was conducted of all patients transported from southeast Alaska to Seattle by an intensive care air ambulance over a five-year period (1982-1986). During the study period, 442 patients were transported an average one-way distance of 703 +/- 58.9 miles. Of these, 134 had a diagnosis of major or multiple trauma and were the focus of this study.

The decision to transfer a patient from Alaska to Seattle is one that separates the patient from his family, can result in a major financial burden, and may risk the lives of several health care providers. The Alaskan physician must be accurate in his diagnosis to prevent too many or too few transfers. No detectable patterns in over- or underdiagnosis of life-threatening injuries could be identified in this study. Further studies dealing with patients treated locally and not transported outside of Alaska are needed to address the total emergency care system. Although the majority of patients were properly stabilized, a significant number required additional therapy in the form of oxygen, IV access, peritoneal lavage, and spinal stabilization. Given the distances and time involved prior to arrival of the transport team, physician education of the use of trauma management guidelines, such as those presented the advanced trauma life support course, could improve the overall stabilization of trauma patients.

O'Meara, Peter; Burley, Mollie; and Heather Kelly (2002). Rural urgent care models: what are they made of? *Australian Journal of Rural Health*: 10; 45-50.

The study aimed to identify the elements that constitute rural urgent care systems. Twelve common elements to rural urgent care systems were identified and divided into two categories – infrastructure and personnel. The key finding was the identification and categorization of 12 essential elements of rural urgent care systems encompassing the infrastructure and personnel components of urgent care. The two major issues of concern and common themes identified were training, education, and support, and the rural context as it relates to social capital.

Reviewers' comments: Articles from other national systems tend to emphasize education and training as a necessary element in rural urgent care; this is an example, see other entries.

Meade, Brian and Peter Barnett (2002). Emergency care in a remote area using interactive video technology: a study in prehospital telemedicine [letter to the editor]. *Journal of Telemedicine and Telecare*; 8: 115-117.

The feasibility of portable telemedicine equipment was demonstrated during simulated emergencies. “Hospital-in-the-home” is a well established mode of health-care delivery

in Australia. “The use of our system should facilitate the monitoring of patients in their own homes, whether it involves a poorly healing ulcer or a psychiatric review.”

Reviewers’ comments: The use of telemedicine is often suggested as the mechanism for caring for people in remote areas. The support for this in the FESC climate describes conditions for which extended stays in a facility are not necessarily relevant. We have included some of these articles to give a sense of what is being considered under tele-care systems.

Olafsson, Gisli and Johann Sigurdsson (2000). Out-of-hours service in rural areas: an observational study of accessibility, attitudes and quality standards among general practitioners in Iceland. *Scandinavian Journal of Primary Health Care*; 18: 75-79.

Modern telecommunication networks guarantee good access to out-of-hours service. If GPs in rural areas are to be expected to provide frontline health care, including in severe emergency situations, regular training courses are needed.

Reviewers’ comments: This article points to the need to structure training for rural primary care providers who are in remote areas. The issue of specific training has not been widely broached in the development of the FESC program. This suggests that we should investigate programs that do train rural practitioners to determine if they teach them to cope with extended stay patients.

Somers, George (1999). GP-based emergency response in rural areas: is there a need? *Australian Journal of Rural Health*; 7: 104-108.

Rural GPs traditionally provide the initial care for the very ill and severely traumatized in small and medium sized rural hospitals. It has been said that these patients would be better managed in a level 1 trauma centre. This paper tests this hypothesis and show that the benefits of the expertise available in the large centres may be outweighed by the loss of life in the prehospital phase, most of which occurs before the arrival of the ambulance. GP involvement would enhance the current early retrieval system. Very ill and severe trauma should be assessed and stabilized in the most appropriate local facility. A national standard for training rural GPs in emergency management skills is needed.

Reviewers’ comments: Again, the issue of training is raise in the context of another system.

Stephan, Phillip J.; McCarley, M. Clifann; O’Keefe, Grant E. ; and Minei, Joseph P. (2002). 23-Hour observation solely for identification of missed injuries after trauma: is it justified? *Journal of Trauma-Injury Infection & Critical Care*. 53(5):895-900.

The use of an observation period to identify missed injuries in trauma patients has gained favor in recent years. This study was undertaken in a population of patients with minimal or no identified injuries to determine the following: whether a period of in-patient observation identifies missed injuries; demographic factors associated with missed injuries; and morbidity of missed injuries. Over four years at a Level I trauma center,

4,738 patients were observed for 23 hours. Of these patients, 630 were converted to full admission and were reviewed. All medical records were reviewed for reason for observation, reason for conversion to full admission, and presence of missed injury. In the 4,738 patients observed, 35 had a missed injury identified. No clinical factors studied were associated with identifying a missed injury. Of the 35 patients that had a missed injury, 21 did not have clinically relevant injuries, whereas the 14 remaining patients did. All of the 14 required prolonged hospital admissions and 9 underwent invasive procedures. Of over 4,700 observed trauma patients, less than 0.5% remained hospitalized for significant missed injuries. No factors were identified that predicted missed injuries. The authors concluded that twenty-three-hour observation for the purpose of identifying missed injuries after thorough emergency department evaluation may not be justified.

Reviewers' comments: This touches on the issue of “observation” patients. Many of these types of patients are classed as “FESC” patients in the current demonstration. The degree to which they match the patients reviewed in this study is an important question to examine in the context of developing guidelines around FESC length of stay.

Wakeman, John (2004). Defining remote health. *Australian Journal of Rural Health*; 12: 210-214.

Defining remote health will allow for distinctions between it and rural health. The paper does not attempt to define a rurality or remoteness index. There are two broad, overlapping approaches to defining “remoteness” – geographical isolation and practice-based approaches. The paper offered the following definition of remote health: Remote Health is an emerging discipline with distinct sociological, historical and practice characteristics. Its practice in Australia is characterized by geographical, professional and often social isolation of practitioners; a strong multidisciplinary approach; overlapping and changing roles of team members; a relatively high degree of GP substitution; and practitioners requiring public health, emergency, and extended clinical skills.

Reviewers' comments: The definition of remote and rural will be a necessary element of a final national policy for FESCs. This is an example of the Australian approach

Williams, Janet; Ehrlich, Peter; and John Prescott (2001). Emergency medical care in rural America. *Annals of Emergency Medicine*; 38(3): 323-327.

The objective of this article is to describe the distinctive nature and widely unrecognized features of emergency medicine in rural and remote areas, with a focus on clinical, workforce, and economic issues. The lack of residents to help with high patient volume, lack of a trauma team and other consulting services, and lack of rapid access to EMS for transferring patients to other facilities are all factors that require rural emergency physicians to possess unique clinical knowledge and skills. A large proportion of emergency medical care in nonurban areas is provided by nonspecialists and midlevel providers because of the emergency medical workforce shortage in rural areas.

Reviewers' comments: These conditions are well-understood in the FESC context, but it also points to the lack of any coordinated program to deal with these failings in the system.

Wilson, Stephen; Shorten, Brett; and Rhona Marks (2005). Costing the ambulatory episode; implications of total or partial substitution of hospital care. *Australian Health Review*; 29(3): 360-365

The Macarthur Health Services introduced an innovative Acute Ambulatory Care Services (MACS) in 2000. The service was designed to replace patient care previously provided in hospital beds with care in the patient's home. The financial implications of complete or partial substitution of hospital care were explored using local data sources from the introduction of the service in 2001-2002. Significant cost savings were accrued from substitution in 10 ambulatory sensitive DRGs, with higher savings in those cases where inpatient admissions was avoided entirely.

Yunker, Rose; Levine, Martha and Abdul Sajid (1985). Free-standing emergency centers and the patient population of family physicians. *Journal of Family Practice*; 21(1): 63-69.

The patient profile of the two free-standing emergency centers studied gives only limited support to the hypothesis that health care consumers perceive free-standing emergency centers as substitutes for private physicians' offices. The lack of patients aged over 44 years, the significant representation of trauma-related problems, and the much lower incidence of diagnostic workups distinguish the center's practice profile from that characteristic of a national sample of family physicians.

Common Themes

The review of the articles and the abstracts found several common themes in the published research:

1. Need for MD involvement early in rural trauma situations. The decision to triage or to treat requires fairly sophisticated diagnostic capacity and supports requirements that MDs be available if not present.
2. Need for routine provider training to keep emergency skills current. Training emerged in descriptions of other systems and in selected descriptions of US rural emergency care.
3. Telemedicine and telecommunications can support more extensive care being provided in rural areas. However, it may serve as an adjunct to necessary on-site skills in the FESC environment.
4. Substitution of traditional inpatient care can result in cost savings and has been applied in rural/remote areas of Australia. We did not find published reports of such systems in the United States.