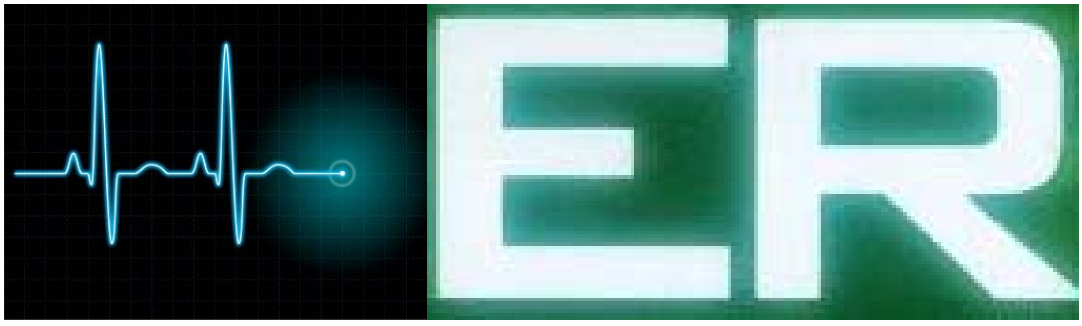
Rural Emergency Department Performance Improvement

A Compendium of Performance Topics



Clint MacKinney, MD, MS

STROUDWATER ASSOCIATES

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The Rural Emergency Department

Emergency care impacts every American. When serious illness or injury strike, Americans of all walks of life count on the nation's emergency care delivery system to provide timely, accessible, and high-quality care that is available 24 hours a day, 7 days a week. The nation's emergency departments serve a critical role providing emergent and life-saving care, but they also provide safety net care for the uninsured, public health surveillance, disaster and bioterrorism preparedness, and adjunct care to local physicians.

The rural emergency department (ED) is critically important to rural communities and their hospitals beyond its safety net role. As required by the Emergency Medical Treatment and Active Labor Act of 1986 (EMTALA), the front door of the ED is always open. Community confidence in the rural hospital is highly correlated with rural ED capacities. Rural hospital success and ED performance are also related. On average, over 9% of rural ED patients are admitted to the local hospital or placed on observation.[1] In addition, the volume of ancillary services ordered through the ED is considerable. However, the ED is not simply the front door to the rural hospital and its services. The ED is also the rural hospital's front window – first and lasting impressions of the hospital are made here. Thus, rural hospital leadership must ensure that ED performance accurately represents the hospital's commitment to quality, efficiency, and service. Your *attention* to ED performance is the currency of your leadership.

This is an introduction to a series of 10 one-page performance improvement topic "briefs" designed to give rural hospital leaders a quick, easy-to-read primer about arguably the most important rural hospital service line – the emergency department. Each topic brief will define an important ED issue, describe the national perspective, and explain why the issue is important in rural America. Lastly, I'll suggest practical performance improvement tips that you can implement in your rural hospital ED.

The following pages will succinctly explore these rural emergency department topics:

- Financial Stability
- Quality and Safety
- Measuring Performance
- Patient Experience
- Staffing and Governance
- Care Transitions
- Department Design
- Risk Management
- Community Benefit

[1] Performance Management Institute analysis (2008 data) and author's experience in a 10,000 visit per year rural emergency department.

Not Necessarily the Money Pit

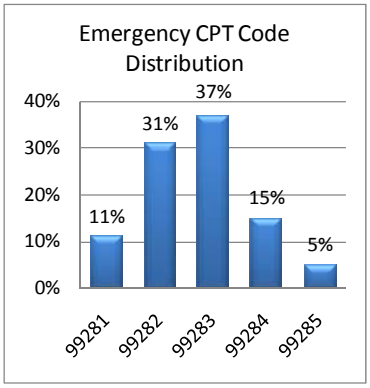
It's the CEO's job to balance competing priorities of clinical quality, customer service, employee growth, and financial stability. Comfort with paradox is a key leadership skill. Yet wallet impact seems to drive organizational behavior change like no other. Hence, pay-for-performance plans are becoming common. Payers know how to leverage our hospitals! Let's first debunk a couple of common ED financing myths.

Myth #1: Medicaid patients and the uninsured inappropriately use the ED. Nope, "Available data do not support assumptions that uninsured patients are a primary cause of ED overcrowding, present with less acute conditions than insured patients, or seek ED care primarily for convenience."[2] Understanding fixed and variable costs is critical for ED financial management. Most ED costs are fixed, that is, one additional patient costs the hospital only minimally more – staff compensation didn't increase and the utility bill didn't change. Therefore, virtually *any* revenue – even if it is Medicaid reimbursement or partial collection from the uninsured – turns into profit.

Myth #2: The ED always loses money. Also likely not true. Based on our research of nearly 100 rural hospitals, 9.4% of ED patients are admitted or placed on observation.[3] That likely represents the vast majority of <u>all</u> rural admissions! (For CAH Medicare patients, you always realize 1% profit.) Maybe even more important is ancillary revenue. Based on national ED statistics from the CDC[4], extrapolated to an 8,000 visits/year ED, the following table indicates that ancillary use is significant. This categorization does not capture all utilization, so we can safely say that an 8,000 visit/year ED orders over 7,000 lab tests (chemistry profiles are counted as only one test), over 4,000 imaging studies, and nearly 1,500 EKGs. My utilization pattern in a 10,000 visits/year rural ED is strikingly similar to the national rates.

Pt Count	Xray	CT	US	EKG
Rate	35.3%	10.7%	2.6%	16.4%
8,000	2,824	856	208	1,312
Pt Count	**Chem**	**Hem**	**Card**	**Urine**
Rate	20.0%	34.0%	11.5%	20.2%
8,000	1,600	2,720	920	1,616

Proper ED visit documentation is critical to ensure optimal reimbursement. Depicted here is the national distribution of ED E/M CPT codes. What is your ED's E/M distribution?



Source: Thompson Reuters

To optimize ED revenue, try these ideas:

- Teach proper ED documentation (dictation or template) to optimize ED reimbursement.
- Consider admission and ancillary revenue during ED financial analysis.
- Reduce barriers to admission, e.g., ED and medical staff conflict, admission and observation confusion, inadequate hospital services or care.
- Encourage the laboratory and radiology departments to consider the ED a "customer."
- Improve co-pay collections *after* care has been provided and/or after an emergency medical condition has been ruled out.

[2] Newton, MF *et al*. Uninsured Adults Presenting to US Emergency Departments: Assumptions vs. Data. *JAMA*. 2008;300(16):1914-1924.

[3] Performance Management Institute analysis (2008 data).

[4] http://www.cdc.gov/nchs/data/ad/ad386.pdf

Quality is Job One

I recently asked a rural hospital Board Chair how he knew if his hospital was providing high quality care. He replied, "Quality must be good because Dr. XYZ would tell me if it wasn't." Since the Board has a legal responsibility for quality of care delivered in the hospital, and we all have a moral responsibility for quality, is the Board chair's reply acceptable? Of course not, especially since our consultation found inconsistent and sometimes worrisome care omissions in the emergency department.

Clinical quality and patient safety should be the foundation for everything we do in the emergency department. In fact, our hospital Mission (or Vision) generally directs us to provide "high quality care to our community" – or something to that effect. Jim Collins writes that for social sector organizations (e.g., nonprofit hospitals), performance must be assessed relative to mission. So, are we delivering on our mission in the ED? Unfortunately, not always.

Community confidence in the local hospital, and (more importantly) a community's sense of safety and security, are correlated with local ED capacity. Although most rural ED care is relatively low acuity, the ED physician's high-wire day is occasionally punctuated by high risk, low frequency situations. Heart attacks, strokes, and multiple trauma may tax the competency of any rural ED.

Quality is not always self-evident. "I know it when I see it" probably isn't a good QI process! During a Rural Heart Attack Care Improvement Project (involving several CAHs), an insightful ED Manager confided, "The Project encouraged me to look for, and find, ST-elevation myocardial infarction (STEMI) improvement opportunities when I thought we were treating all of our STEMI patients perfectly." CMS plans to mandate CAH reporting of heart attack care, so cardiac care improvement efforts are appropriate for a variety of reasons. At Project start, our analysis found multiple chest pain care quality improvement opportunities:

Chest Pain/AMI Measure	Quality Performance
Percent receiving ECGs in less than 10 minutes	46% of 121 eligible patients
Percent receiving aspirin during ED visit	79% of 121 eligible patients
Percent of STEMI receiving fibrinolysis/PCI transfer	58% of 38 eligible patients
Percent of STEMI receiving fibrinolysis in less than 30 minutes	29% of 14 eligible patients

After Project completion, performance in every participating ED improved. Heart muscle, and maybe lives, were saved. However, you don't need to wait for a multi-hospital Chest Pain Project. Start here to deliver the Mission-driven job of ED quality improvement:

- Include ED quality performance on your organizational scorecard.
- Measure and communicate to staff the ED's quality performance.
- Set measureable quality goals; then manage to those goals.
- Review every high risk, low frequency event for improvement opportunities.
- Measure clinical variation between providers (not patients) – where there's variation by provider, there's opportunity for improvement.
- Don't assume yours is a non-punitive organization; anonymously ask front-line staff for their opinion.

Performance Measurement *Counts*

Garrison Keillor welcomes you to Lake Wobegon "where all the women are strong, all the men are good-looking, and all the children are above average." Like kids from Minnesota, we ED professionals are all above average – or are we? How do we know if our ED performance needs improvement?

It's been said that organizations (e.g., EDs) without measureable outputs will be governed by politics (or hunches, I might add). Of course, Einstein reminds us that, "Everything that can be counted does not necessarily count, and everything that counts cannot necessarily be counted." And admittedly, the human health care experience often defies measurement. However, Toyota improves quality, service, and efficiency by first measuring performance. Health care is different from auto manufacturing, but not entirely different from our business and industrial counterparts.

CFOs have a plethora of financial reports and generally accepted accounting principles to measure performance. Yet, does your CFO report to you the percent of admissions from the ED and the total ancillary revenue generated by the ED? Furthermore, don't we have a mission-driven responsibility to provide high quality care to our ED patients? Payers (like Medicare) and patients are increasingly demanding demonstrable performance. To demonstrate performance and to improve performance, we must first measure performance. Right now, virtually all PPS hospitals report clinical quality "core measures" to CMS. Yet only half of CAHs report meaningful data. I wonder how the remaining 50% know if they are providing high quality care or know where they should direct improvement efforts. Recall that reporting performance always precedes paying for performance (CMS calls this *Value-Based Purchasing*). When CMS eventually does mandate CAH quality reporting, CMS will first focus on the rural ED – likely heart attack and transfer care. The take home message is that even if some are not convinced that measurement is important (I think it is); payers and consumers will demand it. There is no reason CAHs cannot perform as well as larger hospitals for those services that CAHs provide. Let's prove it!

Start by selecting a dedicated ED performance tracking system to facilitate informed decision-making. Stroudwater Associates recommends RPM (www.myrpm.org, click Flash Demo), a HIPAA-compliant, web-based tool that provides the technical infrastructure for automating the data collection and reporting functions required to create performance management reports. Yup, that's an advertisement, but it's an endorsement too!

Here are some ideas to jump start ED performance measurement:

- Measure ED clinical performance – start with high risk areas, such as stroke and heart attack.
- Follow-up every ED patient (or at least a large representative sample) with a telephone call.
- Track ED volume, costs, and revenue trends – account for ancillaries and admissions.
- Report ED performance regularly to your board and ED staff.

What's Wrong With Serving the Customer?

It always surprises me that hospitals are so eager to survey every OB patient. Isn't a newborn one of life's most joyous experiences? Therefore, is OB really the most "fertile" department for patient satisfaction improvement opportunities? Maybe not. However, much of the remaining hospital experience begs for a "customer" focus. The popular (and good!) book *If Disney Ran Your Hospital*, the ubiquitous Press Ganey patient survey, and even the public reporting of CMS' Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) all indicate increasing attention to the patient experience. If you don't continuously improve patient satisfaction in your hospital, the competitor down the road will lure your patients away. Customer service can move market share.

What about patient satisfaction in the ED? For the very same reasons that the ED is a risk management challenge (high patient acuity, undeveloped physician and patient relationships, unpredictable wait times), it's also a potential customer relations nightmare. Yet in adversity, there's opportunity. Performance improvement opportunities are just waiting for us (like patients) in the ED!

ED patient satisfaction is critically important to rural hospital success. Community confidence in the rural hospital is highly correlated with its ED capacities. In addition, rural hospitals admit most inpatients through their ED. However, the ED is not simply the front door to the rural hospital and its services. The ED is also the rural hospital's front window – first and lasting impressions of the hospital are made here. Recall that your ED will touch about *ten times as many* patients as does your inpatient unit. Each one of those ED patients can tell a story of compassion and caring in your hospital, or they can talk to all who'll listen about an upsetting and disrespectful experience. You get the picture.

Start improving ED patient satisfaction by acknowledging the key role your ED staff plays in hospital success. Next steps might include:

- Establish value-oriented behavioral standards for all staff that demand compassion and respect. Support your staff, but be clear that repeated behavioral violations will not be tolerated.
- Understand that challenging patients, e.g., drug seekers and the intoxicated, may try our patience, but we must still treat them respectfully.
- If yours is a low volume ED, ask permission, and then call patients back the next day – ask about health status, and their ED experience.
- Design a brief survey for your telephone follow-ups – 5-6 questions should be enough.
- Preferably, ask about objective behaviors, not opinions. Ask for example, "Was your pain controlled as well as could be expected?" "How clear were the discharge instructions?"
- In general, concentrate on patient satisfaction *improvement* over time, rather than comparison to a benchmark (unless you're working with a large database).
- Be quick to compliment staff for good customer service, but review any negative situations carefully before criticizing.

ED Staff Deserves Leadership Attention

The rural hospital ED staff makes the department run well – or not. Southwest Airlines is famous for prioritizing their employees. Southwest figures if the company treats employees well, customers will be happy too. It's hard to argue with Southwest's recipe for success! In healthcare, Press Ganey research has repeatedly demonstrated the direct correlation between staff satisfaction and patient satisfaction. Therefore, the ED staff (physicians, nurses, technicians, etc.) deserves a leader's attention. Recall that attention is the currency of leadership. If you want ED performance improvement, pay attention to the ED!

Now that the ED staff is getting its deserved attention, how many folks do we need? Rural EDs seem to operate in either a feast or famine mode. So, we shouldn't rely too much on published nurse to patient ratios. The rural ED always requires a baseline staffing for safety – such as one RN and physician. Beyond that, highly variable rural ED volumes demand flexible staffing, including assistance from other departments during high-volume and/or high-acuity situations. Also remember that additional administrative duties, like performance monitoring and electronic data entry, can strain clinical staff.

The ED Manager and Medical Director should be paid positions with dedicated administrative time and scheduled ED clinical care shifts. Working managers who regularly "get their hands dirty" builds both managerial credibility and sensitivity. Managers and directors also need good department operational data, decision-making authority (for policy and budget development), and clear job performance expectations. Accountability is key!

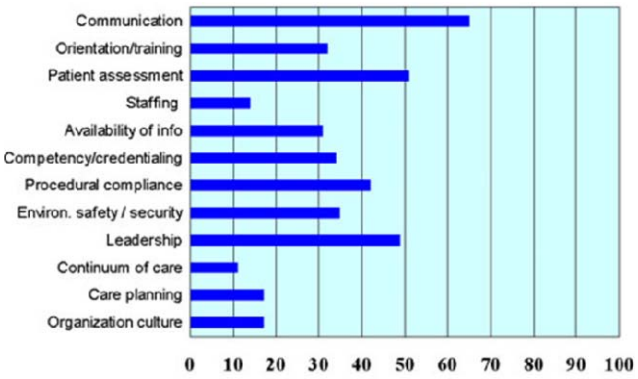
Should you engage an ED physician staffing firm? It's a classic make vs. buy decision. ED staffing firms free you from the headaches of scheduling (a big one), credentialing, and sometimes even coding and billing. But you lose some control. ED staffing firms may not invest as you would in professional education and development, or may not configure compensation to reward clinical quality and patient satisfaction. And of course, life (and ED management) is about trade-offs. Firms do charge for this service! In CAHs, these charges are allowable costs.

If you'd like to use your leadership skill and experience to improve your rural hospital ED, try these ideas:

- Push decision-making *down* to managers, if not the front-line staff. Give managers the data to make wise decision and hold them accountable.
- Make frequent leadership rounds. When folks aren't busy, simply ask, "What's keeping you from providing the best care for our patients?"
- Follow-up on all commitments, both explicit and implied. Docs (and nurses) are like elephants. They'll remember (not fondly!) when leaders pretend to listen and then never follow-up.
- Use the 80/20 rule to match staff to ED volumes. Staff for volumes that occur roughly 80% of the time. During unanticipated high volumes, flex staff from other hospital departments.

Making the Perfect Handoff

You're the patient. At what point in your ED care do you want to be particularly sure that everything goes right? At the end of your physician's 24-hour shift, or maybe during a code next door? Not necessarily! It may be when your physician transitions your care to another physician. The *handoff* is one of the most error-prone processes in healthcare – including in the ED!



In 2006, the Joint Commission identified the root cause of all reported sentinel events ("An unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof."). A whopping 65% were due to communication errors – more than any other factor! Dropping the communication baton is tragically common.

There are several rural ED care transition flash points, each with unique risks:

Patients waiting to be seen by a private physician – The ED has a responsibility for the welfare of all patients physically present in the ED. A plaintiff successfully sued an ED on the basis of failure to act when a patient died from a ruptured aortic aneurysm while waiting in the ED to see the private physician.[5]

Between ED shifts – Handoff patients at the bedside. ED physicians should not rush to leave at shift-end and oncoming physicians should be on-time out of respect to colleagues who may have been up all night!

Admissions to the hospital – Admitting physicians should ideally see the patient in the ED (bedside handoff). Hospitals should have an established process for resolving disagreements between ED and admitting physicians regarding need for admission.

Transfers to another hospital – EMTALA mandates certain communications prior to transfer. Complete written ED records transferred with the patient (or transmitted) should support a succinct, yet thorough, telephone conversation with the accepting physician.

To minimize the patient health and liability risks associated with care transitions:

- Mandate bedside care transitions. Involve the patient in the history and subsequent plan story!
- Promote consistent communication techniques, such as SBAR (situation, background, assessment, and recommendation).[6]
- Consider a policy that states all patients in the ED are to be evaluated by the ED physician unless the private physician is physically present.
- Empower the Chief of Staff to adjudicate (preferably in real time) any persistent disagreements regarding admission appropriateness.
- Document the names of the physicians involved in the handoff, their signatures, and the care transition time in the ED chart.

[5] Described in *Risk Management Monthly / Emergency Medicine.* November 2007.

[6] SBAR: A Shared Mental Model for Improving Communication between Clinicians. J Qua and Pt Safety. Vol. 2. No. 3. March 2006.

Design (Form) Follows Function

Half-century old Hill-Burton rural hospitals cannot adequately support 21st century medicine. Hence, today's CEOs may have a once-in-a-career opportunity to create a hospital that supports our health care mission. All new health care facility planning should employ *evidence-based design.* "Evidence-based health care architecture creates safe and therapeutic environments for patient care and encourages family involvement. It promotes efficient staff performance and is restorative for workers under stress."[7]

Evidence-based design can improve patient safety and clinical quality by reducing patient falls, nosocomial infections, and medication errors. Evidence-based design can improve patient satisfaction by ensuring adequate space for patients/families, reducing noise pollution, and easing navigation through the hospital. Evidence-based design can improve staff recruitment and retention with an aesthetically pleasing facility, lighting matched to task, and reduced patient lift/transfer demands. Lastly, evidence-based design can improve work processes, e.g., via "Lean Thinking" concepts. Reducing the need for just one FTE RN will save the organization $1.25 million over the life of a remodel. Thus, the rural hospital cannot afford not to design for clinical quality, patient satisfaction, staff fulfillment, and organizational productivity.

Because of high ED volumes compared to inpatients, and the importance rural communities place on their EDs, the ED also benefits from evidence-based design. When planning a new or remodeled ED, I suggest consideration of the acronym SPACE:

Safety – Most, if not all, ED exam rooms should be large enough to manage a code. At least one room should be safe for a potentially violent patient and one room should have a negative pressure option.

Privacy – Patient privacy often conflicts with access. Yet appropriately placed curtains and sound dampening molding/ceiling tiles improve privacy.

Access – Wide, swinging glass doors afford easy access for carts/wheelchairs, and allow good patient visualization. All rooms should be visibly accessible from a central station. Patient flow should minimize room change or retracing steps (patients and staff).

Consistency – The layout of cart, chairs, hand washing station, supply cabinets, lights, etc. should be consistent across all ED exam and treatment rooms.

Efficiency – Extra "steps" between a central station and exam rooms, desk and printer, computer and medication dispensing unit all rob valuable patient contact time and needlessly exhaust staff. Design should make work easier and promote lean work processes.

Finally, hire consultants experienced in rural hospital operations and listen carefully to your front line staff from the very beginning of facility planning. Good health care architects will thank you!

[7] Hamilton, DK. Four Levels of Evidence-Based Practice. *The AIA Journal of Architecture*. November 2006.

Driving the Liability Nitro Truck

Emergency Medicine is like driving a nitroglycerin truck – you never know when the whole thing is going to blow up. Illness acuity is high, patient-doctor relationships are undeveloped, and the patient is often frightened and/or in pain. An attorney could not invent a more perfect opportunity for disaster, and lawsuit.

Professional liability lawsuits are horrendous experiences. First and foremost, a lawsuit may mean that a patient was harmed in a health care environment that should diligently ensure patient safety. Secondly, lawsuits can destroy professional self-esteem, careers, and even marriages. Lastly, lawsuits are terribly expensive, not only for insurance companies and their clients, but consequential "defensive medicine" increases health care costs for all. It's tragic but true; the fear of lawsuit permeates an ED physician's day.

ED liability presents itself in at least three distinct (although occasionally concurrent) ways – legal or regulatory violations, hospital policy violations, and professional liability.

The Law – The Emergency Medical Trauma and Active Labor Act (EMTALA) was originally enacted to prevent patient "dumping" – transferring a patient to another hospital because of inadequate or absent ability to pay. However, EMTALA has expanded well beyond that despicable practice. EMTALA demands that we treat everyone equally until an emergency medical condition no longer exists.

Hospital Policies – The courts tend to uphold hospital policies if physicians and staff adhere to the policies. However, if you violate hospital policy, you are unlikely to have a legal leg to stand on. For example, ED physicians often do not have hospital admitting privileges; yet regularly write admission orders to "help out" their inpatient care colleagues. Recall the axiom, "No good deed ever goes unpunished."

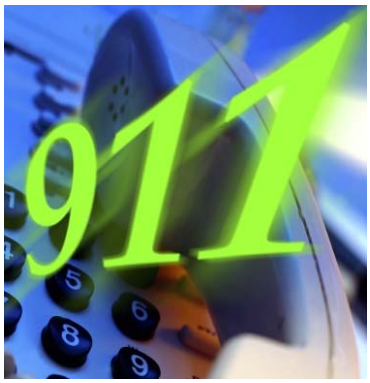
Medical Liability – In U.S. health care, professional liability is a persistent concern, especially for the high-wire act of Emergency Medicine. Remember that communication glitches are the number one root cause of medical errors – and thus play a huge, and often preventable, role in medical malpractice.

Let's explore a few strategies that may ameliorate legal violations and malpractice risk:

- Register, see, and treat all patients presenting to the ED for care. However, if you direct some patients to a nearby urgent care center or clinic, perform and document an emergency medical screening exam on every patient first.
- Prior to transfer, document that the receiving physician and a hospital representative have agreed to accept the patient.
- The policy must be "follow the policy." If there's no policy, the policy should be to create a policy.
- Codify in policy that if an ED physician provides hospital care outside the ED, the care is not contractually guaranteed and is provided under a Good Samaritan provision.
- Implement ED inpatient admission order protocols in lieu of written admission orders.
- Hand off patients at ED shift change (and preferably from ED to floor) at the ED bedside.
- Implement policies for critical lab/imaging value reporting and patient notification of variance.

Community Benefit – It's What We're All About

This is the last topic in the Rural Emergency Department Performance Improvement series. It's fitting that we come full circle in this last brief. In the first brief, I noted the nation's emergency departments serve a critical role in providing emergent and life-saving care. The implication is that we deliver emergency care to *individual* patients – and that's true. Yet a more global perspective reveals that we offer something greater, yet less tangible – safety and security. There is nothing more frightening than a life-threatening emergency. For most Americans, emergency medical care and professional help is only a 911 call away. Thus, accessible and high-quality emergency services provide an inherent sense of safety and security for rural communities.



The *community benefit* of safety and security – it's what we're all about. Yet, hospitals increasingly must justify their nonprofit status with an appraisal of community benefit. Hospitals delivering community benefit include community benefit in their mission, use financial surpluses for charitable purpose, are accountable to the community, provide goodwill over a long period of time, offer charity care, reduce government burden, deliver essential services, provide unprofitable services, educate the public, and serve other unmet human needs.[8]

Rural emergency departments serve their communities with many community benefits. Most obviously, we deliver the essential service of emergency care. We reduce government burden by serving as a safety net for the uninsured and underinsured. We stand ready to respond to natural disasters and bioterrorism. And just as importantly, we provide the intangibles of community safety and security. The rural ED is "open for business" 24/7 – whenever America needs us. However, the Internal Revenue Service, regulators, and our own communities increasingly will demand an accounting.

Here are some ideas to demonstrate community benefit:

- Make emergency services pricing transparent. Transparency is fundamental to accountability.
- Reach out to your community with education programs, such as CPR and first aid training.
- Support local EMS by supporting EMS medical director time and first responder programs.
- Provide in-kind writing expertise to local agencies applying for pre-hospital care grants.
- Develop policies that identify human service needs in the ED and assist patients receive those services, such as crisis intervention counseling, meals on wheels, aging services, and government health insurance application.
- Document charity care, sliding fee scale deficits, government program losses, and cost for the services recommended above.

[8] Telling the Story of Community Benefit. HFMA Educational Report. 2008.

Clint MacKinney, MD, MS

Senior Consultant, Stroudwater Associates

33921 North 91st Avenue

St. Joseph, MN 56374

320-493-4618 (cell)

clintmack@cloudnet.com

Dr. MacKinney has worked in health care for over 25 years – the first 14 years as a rural family physician, practicing the full scope of family medicine. He has both owned a private practice and worked with a large healthcare system. Prior to joining Stroudwater Associates, Dr. MacKinney worked as Medical Director for a globally-capitated primary care group with 210 employees and a $50 million budget. Currently, Dr. MacKinney works as a full-time emergency department physician in rural Minnesota.

Dr. MacKinney is a member of the Rural Policy Research Institute Health Panel and has served on national committees for the Institute of Medicine, the Department of Health and Human Services, the American Academy of Family Physicians, and the American Medical Association. In his capacity as a rural health advocate, Dr. MacKinney writes and presents nationally. Dr. MacKinney's professional interests include patient safety and quality improvement, emergency department performance improvement, physician and administration relationships, rural health policy, and population-based healthcare.

Consultation Work

- Rural hospital performance improvement in over 50 rural communities
- Rural emergency department performance improvement
- Quality improvement, discharge planning, and care management
- Physician and administration relationship development

Professional Activities

- National Advisory Committee on Rural Health and Human Services
- Institute of Medicine Future of Rural Health Committee
- Stratis Health Quality Improvement Organization – Board
- Rural Policy and Research Institute Health Panel (RUPRI)

Selected Publications

- Population Health Improvement and Rural Hospital Balanced Scorecards. *Journal of Rural Health*. 2006.
- Care Across the Continuum: Access to Health Care Services in Rural America. *Journal of Rural Health*. 2006.
- *Quality Through Collaboration: The Future of Rural Health*. National Academies, Institute of Medicine. The National Academies Press. Washington, DC. 2004.
- Access Chapter. *Comments on the June 2001 Report of the Medicare Payment Advisory Commission: Medicare in Rural America*. RUPRI Monograph. 2001.

Presentation Topics

- Patient Safety and Healthcare Quality, Physician Allies, Organizational Culture of Excellence, Pay-for-Performance, CAH Success Strategies, 100,000 Lives Campaign, IOM Rural Report, Medication Reconciliation, Emergency Department Topics, Board Quality Improvement

Education

Dr. MacKinney graduated from the Medical College of Ohio in 1982 and completed a family practice residency with the Mayo Clinic health care system in 1985. He maintains Family Practice Board certification and a Certificate of Added Qualifications in Geriatrics. In 1998, Dr. MacKinney completed his Master's Degree in Administrative Medicine from the University of Wisconsin.