Staffing Your Emergency Department

BY: Kirk B. Jensen, MD, MBA, FACEP

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Staffing your Emergency Department with the right mix of clinical providers is critical to having the ED you want, with a focus on quality, safety, and service. Clinical staffing hours and numbers run the gamut of extremes. It is difficult to get an accurate accounting of these figures, and there are numerous factors impacting the staffing numbers that you see and hear tossed about. It is important for you to have an understanding of the complexities, rules, and axioms that you must use to effectively staff your emergency department. Matching staffing to workload through forecasting, planning and scheduling determines your profitability.
The tactical drivers are:

- Patient volume
- Patient acuity
- Patient Length of Stay
- Boarders
- The capabilities of your physicians
- The role of non-physician staffing
- The hospital’s expectations
- Nursing expectations
- Financial goals and expectations

The tactical drivers of ED staffing are interesting and complex. You cannot compare your emergency to another ED unless you take these factors into consideration.

On average, the cost of staffing represents 75% of an emergency medicine group’s expenditures. 75% of revenue dollars go to staffing. This is, as they say, the elephant in the room. How well you match your staffing speaks to your workload and to your revenue. Scheduling determines the profitability of your physician group. Money buys you resources and power.

I spent four years staffing two emergency departments in inner city Los Angeles. It was God’s work, and I loved the experience, but I also learned that without resources, without money, I could not “buy” nursing staffing; I could not get EKG machines, let alone provide the physician coverage I wanted. Revenue is the entree to resources you need and want. It gives you access to the things you need – space, people, and equipment – so you can deliver the level of service and quality you would like to deliver.

How do staffing decisions get made?

One question to ask is, how does your hospital typically set goals for emergency department staffing? Usually administration looks at external drivers and benchmarks. Many hospitals get their data from MGMA or ACHE. Other considerations include what the consulting groups are telling them, what the competition is saying and doing, what the other ED staffing companies are doing, and finally, the cost. Administration hears and listens to complaints and anecdotes about waiting time for doctors, about patient charts in the rack, about nurses being unhappy with the physician coverage, and draws conclusions.

How does an ER physician group allocate staffing?

ER physician groups tend to first pay attention to the internal drivers; patient acuity and work effort, the complexity involved, compensation, lifestyle issues, ease of recruiting, and physician retention. It is a fact of life that some emergency departments are easier to staff than others. For example, if you are staffing an ED in Chicago, a city with several emergency...
medicine training programs, a decent place to live, and a lot of graduates who want to stay in the area, your drivers for staffing and scheduling are different than if you're staffing a hospital in rural West Virginia.

What are the external performance standards the group cares about?

The external driving forces for the group are customer satisfaction; these customers include patients, nursing staff, the attending physicians, administration, and the hospital board. What are our operational performance standards or special causes? If you're a stroke center or a heart center, if you have a 30-minute guarantee, these programs will impact the staffing you need available. Find out what the external benchmarks are. What are the other groups doing? What does ACEP say? What does the MGMA say? What are the other ER benchmarking groups saying about staffing requirements?

Reasonable performance metrics include:

- Bed placement to MD exam
- Results available to MD review
- ED physician specific patient satisfaction scores
- Ambulance diversion
- Overall ED length of stay
  - Admitted ED patients
  - Discharged ED patients
- Walk-aways
- Overall customer satisfaction with the ED

When you are judging physician performance and physician performance alone, and you're looking at productivity and staffing, then the fairest metrics of how the ER docs are doing are the first three. The latter metrics important but are performance as a whole, not ED physician specific metrics. These are metrics over which we have influence, but we do not have control. Reasonable productivity metrics appear to be all over the ED staffing map; nobody has a perfect, finite number that benchmarks to all EDs. For 15 years, ACEP said the number is 2.3 patients an hour. There are studies with ED physician productivity numbers ranging from 1.5 to 3.13 patients per hour. Past studies affirming high productivity have quoted 2.3 to 2.8 patients per hour. Many groups are looking at 1.5 to 2.0 patients per hour.

The new reality

What really determines your staffing needs are patient complexity, patient acuity, customer service, skilled workforce shortages, crowding, boarders, and risk management. Should you use mid-levels alone, or with a physician? Should you use scribes? What is the impact of an MIS system? There are claims that an MIS system improves productivity, patient flow, and operations. However, what I often hear from ER docs is that an EMR-based physician documentation is slowing them down, often way down. Workarounds can include the use of scribes or augmented staffing. There has to be happy medium in here somewhere.

It is crucial to get your own benchmarking data. Talk to your colleagues. Talk to the hospital down the street, to other hospitals within your group (if you're part of a larger group), and determine what the relevant benchmarking metrics are. If you are part of a large staffing company, you have access to your internal comparative data. Two thousand hospitals in this country belong to the VHA (formally known as
I always remember the words of Louis Carol in Alice in Wonderland. One day Alice comes to a fork in the road and sees a Cheshire cat in a tree. “Which road do I take?” The Cheshire cat replies, “Where do you want to go?” Alice answers, “I don’t know.” Then the Cheshire cat responds, “Well then, it doesn’t matter.”

de not separate these hours out, attributing the mid-level patients to the physicians’ productivity numbers.

You must figure out your expectations and where you are going with your staffing mix before you can come up with the best numbers for you and your group.

- Do you want to maximize physician income?
- Do you want to minimize the number of physicians in your group?
- Do you want to maximize patient satisfaction?
- Do you want to have a rack full of charts always ready for the clinician or do you want a clinician always at the ready for the next patient?
- Are you comfortable with a high LWBS rate or do you want to have an LWBS rate down around zero?

You get to decide, but you must have that conversation before you can figure out what makes sense for your staffing needs.

The key number is 8,760, the number of hours in a year. Determine what your patient velocity or patients treated per hour is or should be.
Determine net collected revenue per patient – because dollars buy resources?

If your NCR is $80 per patient, then your conversation about staffing levels is different than if your NCR is $140 per patient.

What are your operational and administrative costs, and what are the key internal and external drivers and metrics?

The key questions you need to ask and have answers for are; how many patients are coming, when are they coming, what are they going to need, and is our service capacity going to match patient demand?

Patient flow is predictable

Within about 80 - 85% accuracy, you can predict when patients are coming, who they are, what the diagnoses will be, and what lab and imaging needs they’re going to have.

Let’s start with single coverage. There is no better way to fundamentally understand physician coverage than to be in a single-coverage environment with 12 hour shifts. You’re right on the edge of that bubble with 19,000 to 20,000 visits per year. If you can operate at 2.0 patients per hour with 8,760 hours in a year, then you can see 17,500 patients per year. If you go up to 2.5 patients per hour, you can see 22,000 patients per year. If you see 3.0 patients per hour, then you can see 26,000 patients per year (this refers to patients per hour on average.) There are many physicians who think they can see 3.0 patients an hour, but even the best and the fastest of us can seldom see 3.0 patients an hour for 12 hours a day for a full year. We can ramp up when we’re energized and having a good day; we can see 3.0 to 4.0, maybe even 5.0 patients an hour for a short period of time – but doing it for an entire shift or an entire year is unsustainable.

Therefore, look at using a reasonable average number and look at the average flow of productivity. As an example, let’s use round numbers: 18,000 visits with 8,760 hours in a year. That gives you 2.05 patients per hour, 2.0 patients an hour, 18,000 visits, single coverage.

Here lies a significant problem: The typical emergency department processes 64% of their daily ED volume from 10:00 a.m. to 10:00 p.m.. Consider what this does to your numbers. During the 10:00 a.m. to 10:00 p.m. time frame, the typical 18K ED is actually processing 2.63 patients per hour. That’s a number at which most single-coverage emergency departments cannot run. If you’re on single coverage with 12 hour shifts, this means when you come on at 7:00 p.m., the day physician has been operating at this level since 10:00 or 11:00 p.m. What do you think often
happens? There is a patient bolus waiting there and you can’t clear it out until 2:00 or 3:00 a.m..

As an example I offer this story: I once took over a hospital in downtown Los Angeles. They were averaging 1.1 patients per hour. I said, “We can do better.” I took away double coverage and assumed we could do 1.5 patients an hour. I built my budget on 1.5 patients an hour. In the first week, on the second day, I was standing there at 6:00PM in the evening with the sickest patient caseload I had ever seen, drowning in trouble, accepting the fact that I made the mess, and I was going to have to figure a way out of it.

I had a truly bright friend take over an ED seeing 12,000 to 14,000 visits a year, thinking it was going to be “a piece of cake.” What he forgot to factor in was that they were in a vacation area; the summer was exponentially different than the winter. The beauty of it was that my buddy was there on opening day (July 4) so he learned quickly that he was in big trouble and was going to have to rearrange staffing.

The emergency department is, by its very nature, often either over or under staffed. Peak load crises are inevitable. The real question is how many swings and disasters can be tolerated, and how far do you bend before you break? There will inevitably come a time when there is simply more than you can handle – but you don’t want to book it into your ER on a regular basis. Many smaller emergency departments have as much as a 40% variation between their slowest and busiest days.

Most physicians think they can or should see anywhere from 1.5 to 3 patients an hour. When they’re interviewing with you, they tell you quite readily and enthusiastically that they can see three patients an hour. Once they’re on board and they’re working, they’re much happier with 1.5. Staffing is volume and acuity dependent. Consider the workable strategies for single coverage:

- Productivity-based compensation
- Template-based charting
- ED efficiency initiatives
- Scribes or Personal Productivity Assistants (PPAs)
- Rapid Medical Evaluation
- On-call peak load provider back-up
- A transition to 8-hour, flex-length shifts

Recognize unworkable strategies: you can’t realistically flex (lengthen) 12-hours shifts, and the step-up costs to adding coverage (such as a MLP) can be prohibitive.

There are some inherent and expected complexities to account for. Independent EM groups tend to see a higher patient velocity per hour, so on average, ER groups can often see 2.2 patients per hour. Average RVUs per patient are 3.1, so an average productivity is 6.8 RVUs per hour.
Hospital-employed EM groups are on average 17% less productive than independent EM groups (this refers only to productivity.) If you just look at hospital-based independent groups versus employed groups, there tends to be a difference. You need to understand that because whatever group you’re staffing for, you need to take these cultural variations into account.

Here's another view on ED productivity and RVUs per hour: The hourly EP sees roughly 2.0 patients per hour and 2.53 RVUs per patient. That's largely a function of how well you bill and code, so you end up with a productivity value of 5.5 RVUs per hour. The productivity-based ER doc sees 2.2, bills a bit better, and you end up with 6.8 RVUs per hour.

According to Bob Fielder, the founder of PSR, when income is fixed, lifestyle issues take precedence; coverage, flow, workload, etc. 100% productivity-based EP compensation plan plus a template ED medical record yields on average 23% more revenue than fixed hourly compensation and no template.

Perhaps the best situation is a combination of a template for the basics and simple charting and then a dictated or a more detailed chart for the balance. When it comes to scheduling, there are some caveats:

- You have to have thick skin.
- Scheduling is tough.
- Everybody thinks you’re being unfair, that you schedule by preference.
- You’ve got to make forward rotation mandatory. Schedule forward, don’t schedule backwards.
- Make 48 hour rest intervals between turnarounds mandatory.
- Pay a night shift differential (20-25% premium.)

- Schedule holidays before everything else (use a lottery system if you must.)
- Identify meeting days and personal time well in advance.
- Limit the number of docs on leave at any one time. (i.e. It's the 4th of July and everybody’s gone. You know the 4th of July's coming this year and the year after, so plan for it, and then just rotate the distribution of shifts.)

When it comes to scheduling methodologies, there are many ways to schedule once you know who you need (MD, MLP, scribe, etc.), how many you need, and when you need them:

- Historical staffing patterns
- Establishing a best fit by Trial and Error
- Rules-based Computer Program
  - Tangier (www.tangierweb.com)
  - EPSKED (www.bytebloc.com)
  - Active Schedule (www.ncemi.org)
- Workload Matching
  - Schedule according to RVUs of work to be done
- Queuing Theory

You should have an understanding of what is the volume coming in, what is the workload, what is the acuity, what your performance measures are, and how you deploy those performance measures. A working knowledge of queuing theory can help (there are queuing programs out there.)

**When should you consider adding coverage?**

The answer is when your ED volume begins to exceed 18,000 visits per year. Why 18,000? There are 8,760 hours in a year, each and every year – multiply this
by two (2.0 patients per hour) and that gets you to 18,000 patient visits per year. Beyond this patient volume point peak load crises and their consequences start to occur.

**Here are some guidelines for when to add coverage:**

- If your average patient per hour starts to exceed 2.0
- When ED volume begins to exceed 18,000 visits a year
- Turn around times are elevated
- LWBS are unacceptably high
- When there are concerns about the shift being too long
- Patient satisfaction is unacceptably low
- If there are frequent concerns about ED clinician behavior in a stressful environment
- If clinician satisfaction and/or retention is low

When these situations start to occur, your ED is running in the red zone and coverage issues must be addressed. Also keep in mind that there can be significant day-of-the-week variation. I am still astounded when I see the same schedule every day of the week, the same coverage level; I know that in virtually every emergency department in this country Saturday, Sunday and Monday have, on average, higher patient loads than Tuesday, Wednesday and Thursday.

From an operational point of view, when moving to double coverage, use the least-expensive resource to accomplish the mission. 25 to 35% of your ED cases can be seen independently by physician assistants and nurse practitioners. Family practitioners and internists can see 75% or more of the cases that we see in the emergency department. The use of residents is only a net gain when you’re using senior level residents; when it comes to operations and productivity, new residents usually add complexity and slowness to your day. Don’t forget the need for ED surge capacity. The flood is going to come – you don’t know when, but it’s going to come, so think in terms of surge capacity. You can’t manage what you can’t measure (Frederick Winslow Taylor.)
Here are some benchmarking data resources and where to find them:

- Your neighbors
  - Call and/or visit
  - Be sure to compare hospitals with similar acuity and similar volume
- ACEP – acep.org
- Premier – premier.com
- VHA – vha.com
- ED Benchmarking Alliance – edbenchmarking.org
- UHC – uhc.org

Maximize the lowest cost staffing resource first

When it comes to adding coverage, start with the lowest cost staffing that does it for you. This brings us to the subject of mid-levels in the emergency department. Mid-levels give you the flexibility to add coverage when you need to add it. The most important determinant of how mid-levels are going to work in your department is the quality of the individual mid-level, and by quality I don’t mean just clinical judgment. It is work aptitude, work ethic, ability to get along with others, and the drive to see new patients.

RVUs and incentive based compensation

ER physicians and Departments whose compensation is performance-based tend to perform at a higher level, tend to be more productive, and tend to bill and code better. I often appreciate Mel Gottlieb’s remark, “I don’t understand why an emergency department doc would go to all that trouble to do the work and not take the few extra minutes to get paid for it.”

On average, an ER physician these days cost about $180 an hour and can see about 6.8 RVUs per hour. A family practitioner or internal medicine doc in the ER runs at about $110 an hour; they can see about 5.8 RVUs per hour. A mid-level practitioner runs about $60 an hour (the price may be going up) and they can see about 5.5 RVUs per hour. In a dedicated fast track they can see the 2’s, 3’s, and 4’s versus the 4’s, 5’s, and critical care patients.
are in assisting the emergency physician in the core or main ED.

You might want to consider a team-based process; front load your care, have a physician or mid-level in the front, seeing your patients, ordering diagnostic and treatment protocols and then perhaps handing them off to a mid-level operating out of a fast track or a comparable environment. This is a very productive use of mid-levels, and it is much easier to hand off a patient from a physician to a mid level than it is to another doctor.

**Backup Systems**

The best physician backup systems are formalized and based upon bed placement to MD exam. Resist a backup system until the hospital provides its members of the backup team to support the ED and the ED M.D. when the ED is overwhelmed. Backup ought to be more than just calling in another physician. There are times when the right answer is just calling in another physician; but by and large, if the ER is backed up and you need another physician, you also need a secretary, nurse, tech, etc.

Backup systems are most valuable and most effective when they are incorporated into a hospital backup system with pre-defined thresholds, triggers, and next actions that have been agreed upon before the crisis happened. This is not as easy as it sounds, but it is the way to build a sound backup system.

Some other things to consider – jeopardy call, being available two to four hours before or after your shift, formalizing overlapping shifts, having a dedicated call schedule. All on-call schedules should have an activation process that is formalized and based on pre-defined criteria. If you want to create a state-of-the-art backup system, this is what needs to be true.

Be sure you aren’t being asked to cover hospital short-staffing, inappropriate staffing, poor ancillary service support, or poor medical staff support.

**Remember the rule of five:**

- EM provider
- Nursing / techs
- Ancillary services
- Administration
- Counseling / admitting staff

**Nursing**

Nursing staffing best practices are a separate but related set of topics. You can’t control RN staffing, but here is the management paradox: you need to know what your physician staffing levels are, you need to know what nursing staffing levels are, you need to know what staffing benchmark data they’re using, and you need to know how many nursing shifts are going unfilled. Even though we don’t have control over it, nursing staffing severely impacts what we can do.
We know that ER physicians may be the scarcest resource in the ER, but they are certainly not the most valuable; in many ERs, nurses run the department, it's nurses that keep things flowing and if nursing staffing levels and experience aren't where they need to be then no amount of physician coverage is going to make up for that.

• According to the 2001 ENA Benchmark Guide, the average ED patient requires: 1.57 hours of direct ED nursing (RN) care
• Annual census x 0.000537 = RN coverage/day
• 2.30 hours of total care (RNs, Triage, Techs, U.S., Manager)

ENA Guidelines:
• 2.5 patients/FTE nursing care
• One FTE = 2080 hours per year
  - 14% Benefit Time
  - 3.2% Education Time
  - 8.4% Break Time
• One FTE = 1548 patient care hours
• 1548 x 1.34 (adjusted) = 2080
• 14% of Nurse duties can be delegated to non-nurse (look to the ENA or MGMA for a more detailed analysis)

Scribes and PPAs
According to one study, scribes improved patient velocity or patients per hour from 2.2 to 2.5. What I routinely see quoted by my group and other groups is that on average, a good scribe program will add half a patient per hour. So you can go from 2 to 2.5 patients/hour. You can go from 1.5 to 2. You can even go from 2.3 to 2.8. The numbers are compelling. You only have to see one or two more patients a shift to pay for a scribe. In simple terms, you need to see two extra patients a shift to pay for a scribe.

Imagine this scenario: You have five people coming in, all victims of minor accidents. You have to take care of them. With a scribe, nothing’s easier. A scribe will do the chart, order the X-rays, and keep you on task. Without the scribe, all of a sudden you’ve got a bolus of two hours’ worth of work and you’re having trouble keeping it all straight. Sound appealing? The objectives of a scribe program are:

• More complete charting
• Data “wrangling”
• On-line problem solving
• Improving collections ratios
• Improving asset velocity
• Implement rapid cycle testing

The following data from Inova Fairfax Hospital outlines the case for the use of scribes:

• 18-20% increased charge capture
• Improved asset velocity
  - Before scribes: 1.9
  - After scribes: 2.5
• Improved average RVU
  - 18-20%
Outcomes – Inova Fairfax Hospital

18-20% increased charge capture

Improved accet velocity
  - Before Scribes: 1.9
  - After Scribes: 2.5

Improved average RVU
  -18-20%

Improved lab documentation
  - Before Scribes: 55%
  - After Scribes: 89%

Improved ratio of compliments to complaints / 1,000 visits
  - Before Scribes: 5:1
  - After Scribes: 9:1

The two biggest problems you may run into are the cultural changes for the nurses and how to manage another group of people. Above is an overview of key physician scribe economics. Remember that revenue increases for the hospital as well.

In summary, we have been looking at the key strategies for successfully staffing your emergency department. It starts at the top with a contribution and understanding from hospital administration. Your nursing leadership and staff have to be actively involved. Your team has to be onboard. You need to understand where you’re going with this and what the key internal and external drivers for your staffing. Your patient population, acuity, and volume all play a role. It is about aligning your team’s behavior, your team’s incentives, values, and goals with your staffing objectives. There is no one right or wrong answer for everybody, but there is a science to this. No margin, no mission.

As Benjamin Franklin pointed out, “If you end up at the end of the day with a dollar, it’s a good day. If you end the day a dollar short, it’s not a good day.” Staffing your emergency department is about setting a margin so you can continue with your mission. How well you match your staffing (costs) to your workload (revenue) through staffing and scheduling determines the profitability and success of your physician group.
About the Author

Kirk B. Jensen, MD, MBA, FACEP, is Chief Innovation Officer for EmCare and Chief Medical Officer for BestPractices, Inc. Dr. Jensen has spent over 20 years in Emergency Medicine management and clinical care-coaching, consulting, and developing innovative patient care solutions including the award-winning Risk-Free ED—and is a national thought leader in patient safety, risk management, integrated care, practice management, standardization, emergency department flow and hospital-wide flow.

As a faculty member for the Institute for Healthcare Improvement (IHI), Dr. Jensen has held numerous leadership positions focusing on quality improvement, patient satisfaction, and patient flow both within the ED and throughout the hospital. Dr. Jensen also serves as a Medical Director for Studer Group. He was honored by the American College of Emergency Physicians (ACEP) as the 2010-2011 Outstanding Speaker of the Year.

Dr. Jensen has contributed to numerous articles and books including The Hospital Executive’s Guide to Emergency Department Management, Emergency Department Leadership and Management: Best Principles and Practice, Emergency Department Management and The Patient Flow Advantage.

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Contact

10306 Eaton Place
Suite 180
Fairfax, VA 22030
(800) 910-3796
info@best-practices.com

www.best-practices.com