

Emergency Department Logistics



Or:

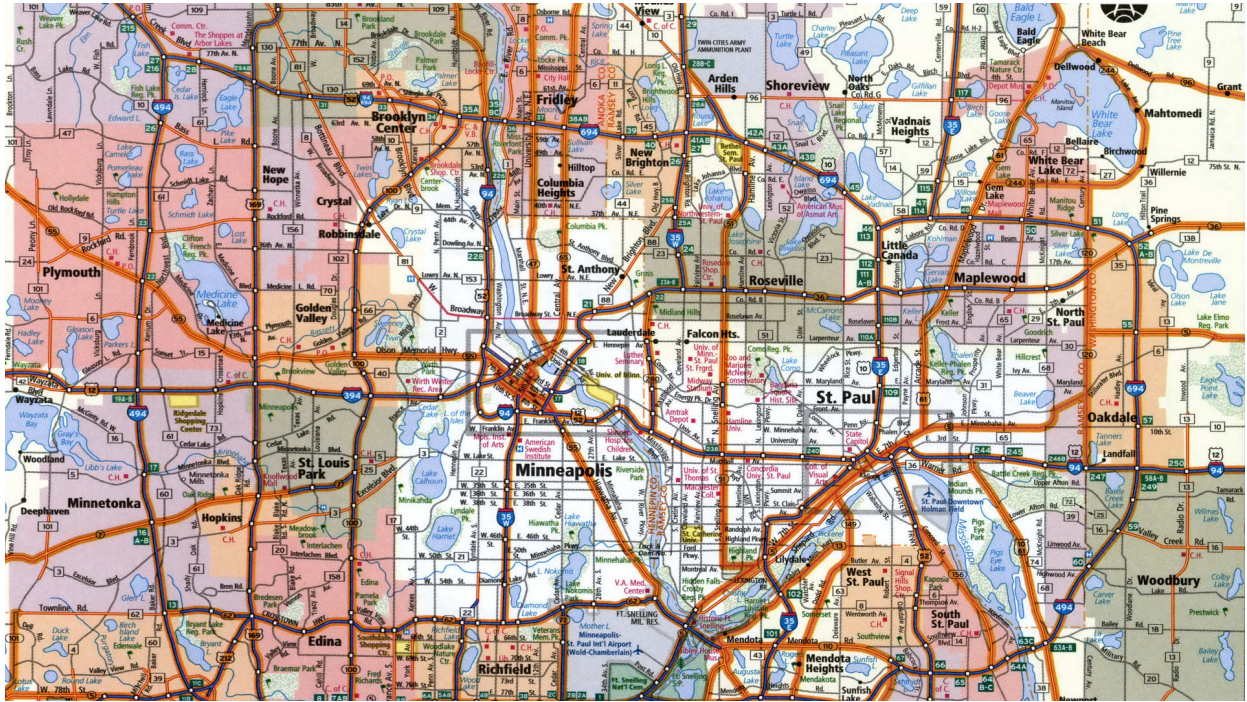
“Why did that take so long?”

Or:

“Why did that cost so much?”

Andrew Meister, MD
ASQ Northern Virginia
April 8, 2026





Quality Goals?

Emergency Department Logistics



Background – Emergency Medicine



Meet our team – what goes into one visit



Simulate a day in the ED


Emergency Medicine - Background

- Relatively new specialty – specific training programs emerged in 1980s.



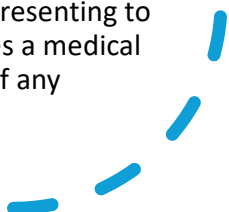


Emergency Medicine - Background

- Relatively new specialty – specific training programs emerged in 1980s.
 - Physicians are either health system employees, large contract management group employees, or partners with professional associations
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Emergency Medicine - Background

- Relatively new specialty – specific training programs emerged in 1980s.
 - Physicians are either health system employees, large contract management group employees, or partners with professional associations
 - EMTALA: Emergency Medical Treatment And Labor Act (1986)
 - Federal law dictates that anyone presenting to an emergency department receives a medical screening exam and stabilization of any emergency medical conditions
- 



Before we see a patient: Our Team – 24/7

Physical Space

- Environmental Services
- Maintenance
- IT support
- Materials Management
- Security
- Weapons Screener

Triage

- Registration
- Triage Nurse
- Triage EMT

One patient: 75-year-old with abdominal pain

Blood and
Urine Testing,
maybe an EKG

IV: fluids,
pain/nausea
medications

CT scan, maybe
ultrasound

Needs
admission

List of tasks

- Registration and nurse assessment
- Physician assessment/orders

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- Lab analysis
- Lab results entered in EMR
- Lab results interpreted by physician

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- **IV Placement**
- **Medication Verification**
- **Medication Administration**

List of tasks

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- Physician assessment/orders
- Blood draw, urine sample
- Blood transport to lab
- Lab analysis
- Lab results entered in EMR
- Lab results interpreted by physician
- IV Placement
- Medication Verification
- Medication Administration
- **Transport to/from CT**
- **CT image acquisition**
- **Transmission of images to radiologist**
- **Radiologist interpretation**
- **Physician review of results**

List of tasks

- Registration and nurse assessment
- Physician assessment/orders
- Blood draw, urine sample
- Blood transport to lab
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- Transport to/from CT
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- Transmission of images to radiologist
- Radiologist interpretation
- Physician review of results
- **Physician re-evaluation**
- **Page Hospitalist or surgeon**
- **Assign bed for admission**

List of tasks – Complex System and Every step has to work

- Registration and nurse assessment
- Physician assessment/orders
- Blood draw, urine sample
- Blood transport to lab
- Lab analysis
- Lab results entered in EMR
- Lab results interpreted by physician
- IV Placement
- Medication Verification
- Medication Administration
- Transport to/from CT
- CT image acquisition
- Transmission of images to radiologist
- Radiologist interpretation
- Physician review of results
- Physician re-evaluation
- Page Hospitalist or surgeon
- Assign bed for admission

List continues:
1 patient =
20+
person team

- Physical Space
 - Environmental Services
 - Maintenance
 - IT support
 - Weapons screener
 - Materials Management
 - Security
- Triage
 - Registration
 - Triage Nurse
 - Triage Tech
- In Room
 - ED Tech (draws blood, EKG)
 - ED Nurse (IV, medications, assessments)
 - ED Physician
 - Pharmacist, Pharmacy Tech
 - Lab tech
 - Transport
 - Radiology Tech
 - Radiologist
- Admit
 - Health Unit Secretary
 - Hospitalist +/- surgeon
 - Placement/Nursing Supervisor
 - Floor nurse
 - Transport
 - Nutrition Services



Our 8-bed Emergency Department

- 8 Beds:
 - One Trauma/Resuscitation Bay
 - One Mental Health Safe room
 - 6 General Medical Rooms
- Small hospital, but has most services:
 - Operating Room
 - Obstetrics
 - Medical-Surgical Unit
 - Intensive Care Unit
 - Full Radiology Capabilities

Our 8-bed Emergency Department

- 8 Beds:
 - One Trauma/Resuscitation Bay
 - One Mental Health Safe room
 - 6 General Medical Rooms
- Staffing:
 - 1 Physician
 - 4 Nurses
 - 2 Techs

Our 8-bed Emergency Department: 7 am

- **ROOM 1 (critical):** Open
- **ROOM 2:** 84 year old, CHF. **Waiting for admit (2 hours).**
- **ROOM 3:** 8 year old, asthma. **Going home**
- **ROOM 4:** 25 year old appendicitis. **Waiting for admit.**
- **ROOM 5:** 75 year old, abdominal pain. **Waiting to be seen.**
- **ROOM 6:** Open
- **ROOM 7:** 34 year old, alcohol intoxication. Sleeping.
- **ROOM 8 (mental health):** 44 year old, suicidal. **Waiting for admission. Needs 1:1 staffing. Now in ED for 22 hours.**

Our 8-bed Emergency Department: 7 am

- Total Patients: 6
 - Medical Admissions Waiting: 2
 - Psychiatric Admissions Waiting: 1
 - Waiting to be seen: 1
 - In Process: 1
 - Ready to discharge: 1
- Waiting Room: 0
- Open Rooms: 2

Our 8-bed Emergency Department: 10 am

- **ROOM 1 (critical):** 24 year old MVC, stable, tests in process
- **ROOM 2:** 84 year old, CHF. **Waiting for admit (5 hours).**
- **ROOM 3:** 7 year old ear pain, **Waiting to be seen**
- **ROOM 4:** 17 year old UTI
- **ROOM 5:** 75 year old, abdominal pain. **Waiting to be admitted.**
- **ROOM 6:** 28 year old chest pain
- **ROOM 7:** 34 year old, alcohol intoxication. Sleeping.
- **ROOM 8 (mental health):** 44 year old, suicidal. **Waiting for admission.** Now in ED for 25 hours.
- Waiting Room:
 - 51 year old finger laceration
 - 90 year old fever
 - 57 year old ? stroke

What's My Priority?

1. Evaluate and Stabilize Critically-Ill Patients.

What's My Priority?

1. Evaluate and Stabilize Critically-Ill Patients.

2. Discharge anyone I can.

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 - 51 year old finger laceration
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 - 57 year old ? stroke

Our 8-bed Emergency Department: 10 am

- **Total Patients: 11**
 - Medical Admission Waiting: 2
 - Psychiatric Admission Waiting: 1
 - Waiting to be seen: 1
 - In Process: 4
 - Ready to discharge: 0
- **Waiting room: 3**
- **Open Rooms: 0**

Our 8-bed Emergency Department: 12 pm

- **ROOM 1:** 24 year old MVC, stable
- **ROOM 2:** 84 year old, CHF. **Waiting for admit (5 hours).**
- **ROOM 3:** 90 year old fever
- **ROOM 4:** 57 year old ? stroke
- **ROOM 5:** 75 year old, abdominal pain. **Waiting for admit (1 hour).**
- **ROOM 6:** 28 year old chest pain
- **ROOM 7:** 34 year old, alcohol intoxication. **Sleeping.**
- **ROOM 8:** 44 year old suicidal. **Waiting for admission. Now in ED for 27 hours.**
- **Waiting Room:**
 - 51 year old finger laceration (2 hour wait now)
 - 54 year old abdominal pain
 - **87 year old fall**

Our 8-bed Emergency Department: 12 pm

- **Total Patients: 11**
 - Medical Admission Waiting: 2
 - Psychiatric Admission Waiting: 1
 - Waiting to be seen: 0
 - In Process: 4
 - Ready to discharge: 0
- **Waiting room: 3**
- **Open Rooms: 0**

Our 8-bed Emergency Department: 1 pm

- **ROOM 1:** 24 year old MVC, stable. Discharge
- **ROOM 2:** 84 year old, CHF. Waiting for admit (6 hours).
- **ROOM 3:** 90 year old fever. Waiting for admit (1 hour)
- **ROOM 4:** 57 year old ? Stroke. Waiting for admit (1 hour)
- **ROOM 5:** 75 year old, abdominal pain. Waiting for admit (2 hours)
- **ROOM 6:** 54 year old abdominal pain
- **ROOM 7:** 87 year old fall
- **ROOM 8:** 44 year old suicidal. Waiting for admission. Now in ED for 28 hours.
- Waiting Room:
 - 51 year old finger laceration (3 hours now)

Our 8-bed Emergency Department: 1 pm

- Total Patients: 9
 - Medical Admission Waiting: 4
 - Psychiatric Admission Waiting: 1
 - Waiting to be seen: 0
 - In Process: 2
 - Ready to discharge: 1
- Waiting room: 1
- Open Rooms: 0
- Effective Rooms: 3

Our 8-bed Emergency Department: 1 pm

- **ROOM 1:** 24 year old MVC, stable. Discharge
- **ROOM 2:** 84 year old, CHF. Waiting for admit (6 hours).
- **ROOM 3:** 90 year old fever. Waiting for admit (1 hour)
- **ROOM 4:** 57 year old ? Stroke. Waiting for admit (1 hour)
- **ROOM 5:** 75 year old, abdominal pain. Waiting for admit (2 hours)
- **ROOM 6:** 54 year old abdominal pain
- **ROOM 7:** 87 year old fall
- **ROOM 8:** 44 year old suicidal. Waiting for admission. Now in ED for 28 hours.
- Waiting Room:
 - 51 year old finger laceration (3 hours now)
- AMBULANCE PHONE:
 - 22 YEAR OLD, METH INTOXICATION, COMBATIVE, IN RESTRAINTS

Our 8-bed Emergency Department: 3 pm – end of shift

- **ROOM 1:** 22 year old meth intoxication, sedated.
- **ROOM 2:** 84 year old, CHF. Waiting for admit (8 hours). FELL DURING EVAL OF ROOM 1.
- **ROOM 3:** 90 year old fever. Waiting for admit (3 hours)
- **ROOM 4:** 57 year old ? Stroke. Waiting for admit (3 hours)
- **ROOM 5:** 75 year old, abdominal pain. Waiting for admit (4 hours)
- **ROOM 6:** 54 year old abdominal pain, getting work-up.
- **ROOM 7:** 87 year old fall. Waiting for admit (1 hour)
- **ROOM 8:** 44 year old suicidal. Accepted for transfer. Waiting for EMS – ETA 6-8 hours. Now in ED for 30 hours.
- Waiting Room:
 - 8 people, including laceration (now 5 hours)

Call Hospital Nursing Supervisor

- Full day of OR cases – need beds for post-ops
- We're full
- 2 medical/surgical nurse sick calls
- Sorry

Our 8-bed Emergency Department: 3 pm

- Total Patients: 16
 - Medical Admission Waiting: 5
 - Psychiatric Admission Waiting: 1
 - Waiting to be seen: 0
 - In Process: 2
 - Ready to discharge: 0
- Waiting room: 8
- Open Rooms: 0
- **Effective Rooms: 2**

Our 8-bed Emergency Department: 3 pm

- What Happened?
 - Critical mass of patients required ED rooms for extended stays

ED Boarding – A Public Health Crisis. Causes:

Limited availability of long-term care facility beds

Hospital staffing shortages

Hospital financial challenges – payment incentives

Unbalanced surgical schedules

Limited availability of mental health beds

Physical space constraints

Union contracts

EMS shortages

ED Boarding - Consequences

Worse outcomes for patients

More expensive

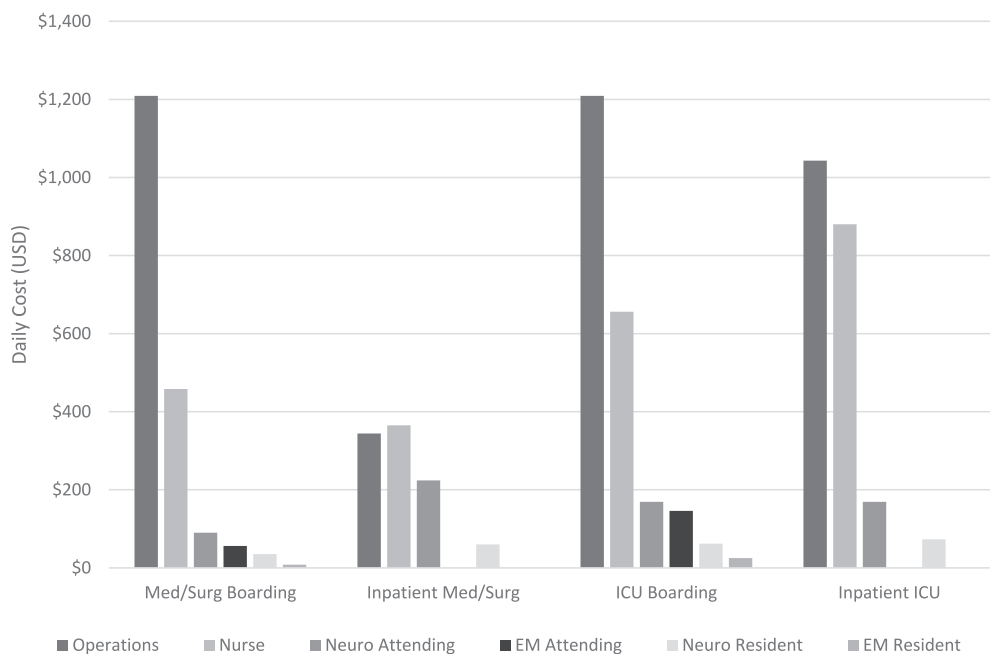
Uncomfortable and unpleasant experience

Wait times increase


Patients/family frustration

Staff burnout


Violent outbursts



ED Boarding – Work- Arounds

- Physician in Triage
 - Admit holding units
 - “Fast track” areas for low acuity patients
 - Hallway beds
 - Expand Emergency Department
 - Surgical schedule smoothing
 - Patients leaving without being seen
- 

Physician in Triage

- Advantages:
 - “Wait Times” go to near-zero
 - Physician can screen for sicker patients
 - Some low-acuity patients can be discharged from triage and won’t need a room
- 

Physician in Triage

- Advantages:
 - "Wait Times" go to near-zero
 - Physician can screen for sicker patients
 - Some low-acuity patients can be discharged from triage and won't need a room
- Disadvantages:
 - Triage evaluations are often cursory: can't do thorough exams
 - Over-testing
 - Delays remain for patients to receive more definitive care
 - Need sufficient dedicated resources to run effectively (Stuff, Staff, Space)

Quality Goals?



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