How to Re-Position the Disposition: Sparing the ER with Alternative Transport Destinations (aka Ignoring the Data and Doing What the $#@% We Want)

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Introductions

- Interim Deputy Medical Director -- Jefferson Williams
- Deputy Director of Professional Development – Joseph Zalkin
- Deputy Director of Clinical Affairs – Michael Bachman
- Executive Officer – Chris Colangelo
- District Chiefs for Advanced Practice Paramedics – Benji Currie and Mike Lyons


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AMBULANS
112
AMBULANS
LENHOVDA
WWY 219


TRIPLE T TRAILS
Bed & Breakfast

Atul Gawande Hot Spots

" [Dr} Brenner wasn't all that interested in costs; he was more interested in helping people who had received bad health care. The people cycling in and out of the hospital were usually the people receiving the worst care."

Terms

- Non-transport:
  - Refusal of service – patient declines transport after being offered same
  - Declination – EMS providers may decline transport even if patient requests same
- Alternative destination:
  - Transport of a patient to a destination other than an emergency department
- Alternative transport:
  - Transport to an ED sans ambulance

The Issue

Commentaries

- Zachariah, BS
  - Opportunity cost for non-emergency transport is negligible
  - Payment is tied to transport
  - We are in the unscheduled medical, not the emergency medical, business
- Krohmer JR
  - Opportunity cost is real
  - Payment should not be tied to transport
  - We are in the unscheduled medical business, but that does not always equal transport
    - Acad EM 1999;6(1):1-7

EMS = UMS

Either Way, We Are Changing

The Issue

- EMS likely will soon live in Health and Human Services, Heath Resources and Services (DHHS HRSA)

- It seems unlikely that the present payment structure focused on hospital transport will remain in its current state

The Evidence – Non-Transport

- Evidence exists for specific conditions:
  - Hypoglycemia
  - Narcotic overdose

EDUCATION AND PRACTICE

PREHOSPITAL HYPOGLYCEMIA:

THE SAFETY OF NOT TRANSPORTING TREATED PATIENTS

Ed Cain, MD, Stacy Ackroyd-Stolarz, MSc, Peggy Alexiadis, BA, BSc, RRT,
Daphne Murray, BN

Prehosp Emerg Care 2003;7;468-75

Hypoglycemia

The Short-term Outcome of Hypoglycemic Diabetic Patients Who Refuse Ambulance Transport after Out-of-hospital Therapy

C. CRAWFORD MECHEM, MD, ALLYSON A. KRESHAK, BA, EMT,
JENNIFER BARGER, BSN, RN, FRANCES S. SHOFER, PHD

Acad Emerg Med 1998;5:768-72

Out-of-hospital Treatment of Hypoglycemia: Refusal of Transport and Patient Outcome

STEVEN J. SOCRANSKY, MD, RONALD G. PIRRALLO, MD, MHSA, JONATHAN M. RUBIN, MD

Acad Emerg Med 1998;5:1080-85

Can Paramedics Safely Treat and Discharge Hypoglycemic Patients in the Field?

E. BROOKE LERNER, PHD, ANTHONY J. BILLITTIER IV, MD, DANIEL R. LANCE, MD, MPH, DAVID M. JANICKE, MD, AND JOSETTE A. TEUSCHER, MD

Am J Emerg Med 2003;21:115-20

Hypoglycemia Summary

- Across all studies, ~3% recurrence rate of hypoglycemia in 48 to 72 hours
- <1% have significant complications
- Lack of randomization prevents inference of causality

Narcotic Overdose

No Deaths Associated with Patient Refusal of Transport After Naloxone-Reversed Opioid Overdose

David A. Wampler, PhD, D. Kimberley Molina, MD, John McManus, MD, Philip Laws, Craig A. Manifold, DO

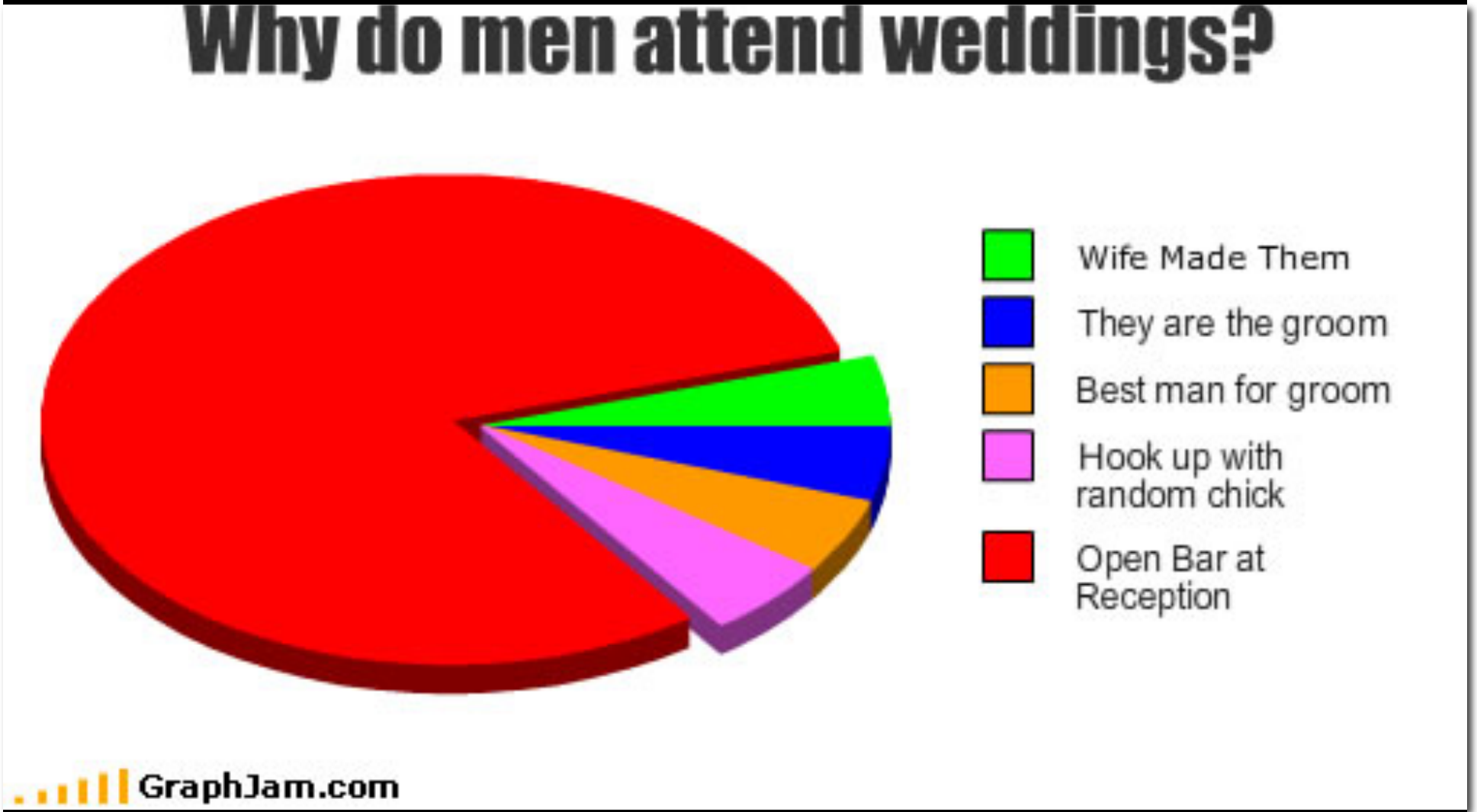
Prehosp Emerg Care 2011;15:320-24

TABLE 2. Patients Presenting to the Medical Examiner's Office after Naloxone Treatment and Patient-Initiated Refusal within the Study Period

EMS Disposition	Time (days) between Service and Death	Cause of Death
Refusal	372	Heroin
Refusal	54	Heroin
Refusal	4	Cocaine and heroin
Refusal	327	Cirrhosis
Aid only	250	HTN, CAD
Refusal	234	GSW
Refusal	247	Complications of a hip fracture
Refusal	7	GSW
LEO	34	Heroin

CAD = coronary artery disease; EMS = emergency medical services; GSW = gunshot wound; HTN = hypertension; LEO = law enforcement officer.

Some Findings Do Not Require a Study



The Problems

- How do we define necessity?
- How can we keep from confusing non-transport with alternative transport? Is there a difference?
- What is the gold standard for an appropriate non-transport or alternative transport?

Important Theme

"The question of appropriateness of use recedes not only as difficult to measure but also of little relevance. The question becomes: 'how can ambulance services best plan the cost effective provision of prehospital care so that varied healthcare needs expressed by the general public through 999 [sic] calls receive an appropriate response?"

Undertriage, Overtriage, or No Triage? In Search of the Unnecessary Emergency Department Visit

Brent R. Asplin, MD, MPH

Annals Emerg Med 2001;38:282-85

"In view of these crucial advantages of the emergency department over scheduled clinics and private practitioners, perhaps we should stop asking why people come to an emergency department and instead ask why anyone gets his care anywhere else."[1]—Julius Roth, PhD

So Far

- Patients and EMS providers have greater agreement regarding necessity for EMS transport than do physicians
- Definitions regarding appropriateness of transport are non-uniform
- With these caveats, the “inappropriate” rate is ~30%-40%

Paramedic Determinations of Medical Necessity: A Meta-Analysis

Lawrence H. Brown, EMT-P, MPH&TM, Michael W. Hubble, PhD, MBA, NREMTP,
David C. Cone, MD, Michael G. Millin, MD, MPH, Brian Schwartz, MD,
P. Daniel Patterson, PhD, MPH, EMT-B, Brad Greenberg, MD, MPA,
Michael E. Richards, MD, MPA

PEC 2009;13:516-27

Summary

Study*	NPV	NPV CI
Pointer JE et al. 2001[42]	0.997	0.981, 1.00
Gratton MC et al. 2003[37]	0.610	0.965, 0.987
Haines CJ et al. 2006[36]	0.979	0.645, 0.874
Zachariah BS et al. 1992[45]	0.780	0.668, 0.837
Hauswald M 2002[40]	0.763	0.546, 0.670
AGGREGATE	0.912	0.707, 0.978

Some Programs That Are On-Going

- Wake County Mental Health and Substance Abuse
- Houston Nurse Line
- Fort Worth CHF In-Home Diuresis

Alternative Destination

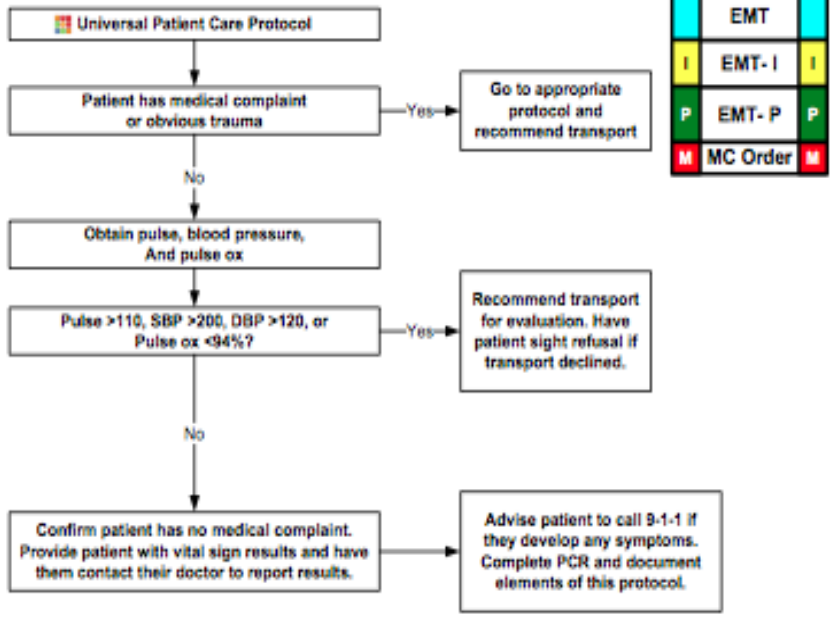
- Patient has primary mental health crisis and/or substance abuse
- Patient does not require sedation or demonstrate agitation
- APP will then contact alternative site and evaluate the patient for potential placement

Well Person Check

History:
- Patient presents requesting "blood pressure check"
- EMS responders to "assist invalid"
- Other situation in which patient does not have a medical complaint or obvious injury

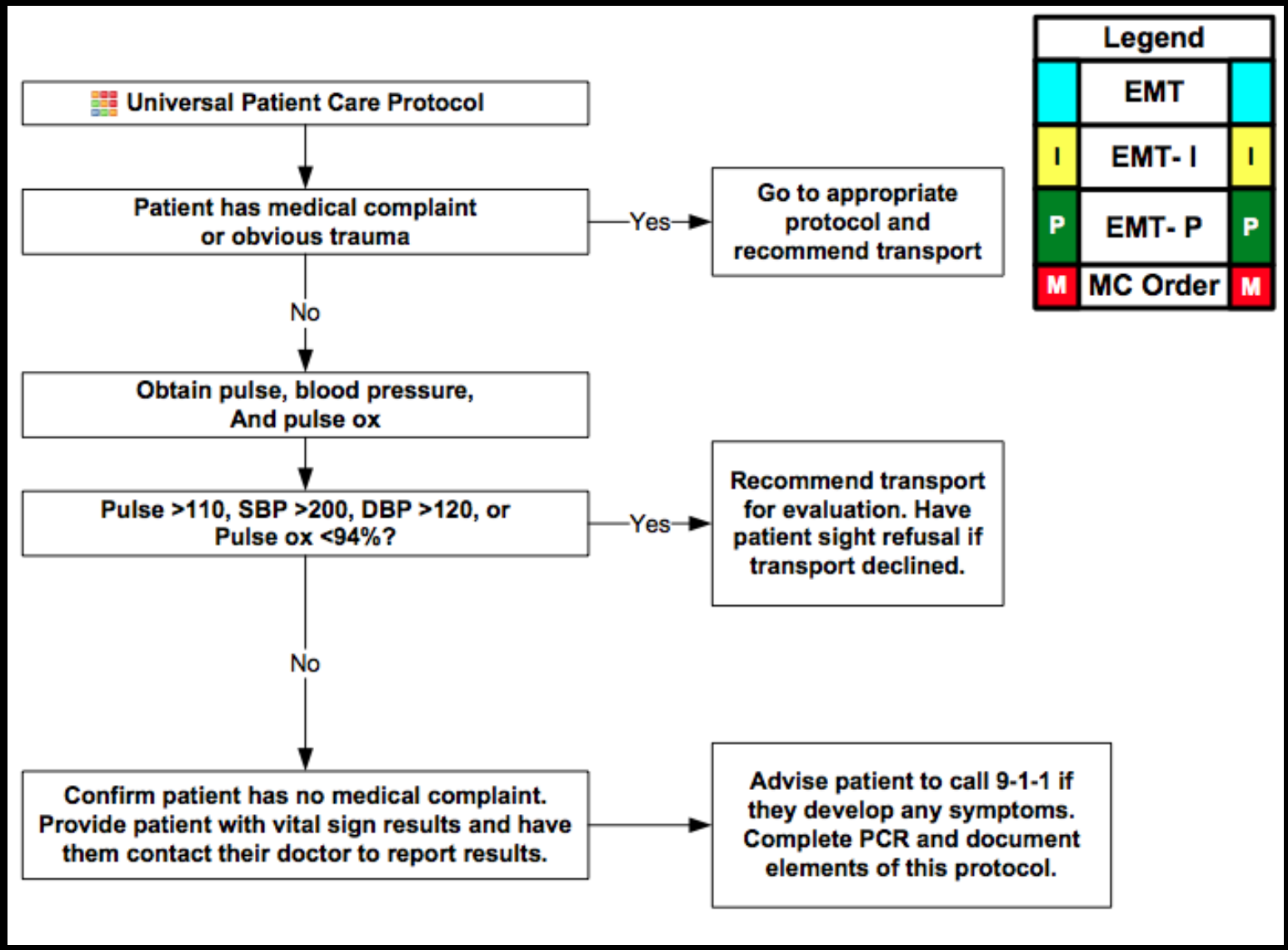
Signs and Symptoms:
- Assess for medical complaint
- For patients with hypertension, particularly check for chest pain, shortness of breath, and/or neurologic changes
- For assist invalid calls, particularly check for syncope, trauma from fall, or inability to ambulate

Differential:
- Hypertensive urgency
- Hypertensive emergency
- Syncope
- Cardiac ischemia
- Cardiac dysrhythmia
- Fracture
- Head trauma



Special Response Protocols

Pearls:
- This protocol pertains to ALL responders
- Patients who are denying more severe symptoms may initially present for a "routine check". Please confirm with the patient at least twice that they have no medical complaints.
- All persons who request service or meet the definition of a patient shall have an PCR completed.
- For patient in this category, the PCR may be brief but must include vital signs and documentation of the lack of a medical complaint. Additionally, patient's with a potential mechanism for trauma should have a trauma exam completed.


Universal Patient Care Protocol
Patient has medical complaint or obvious trauma
Yes
Go to appropriate protocol and recommend transport
No
Obtain pulse, blood pressure, And pulse ox
Pulse >110, SBP >200, DBP >120, or Pulse ox <94%?
Yes
Recommend transport for evaluation. Have patient sight refusal if transport declined.
No
Confirm patient has no medical complaint. Provide patient with vital sign results and have them contact their doctor to report results.
Advise patient to call 9-1-1 if they develop any symptoms. Complete PCR and document elements of this protocol.
Legend
EMT
I
EMT- I
P
EMT- P
M
MC Order

[redacted]

Medical Screening of Appropriateness for Admission:

01 - (☐) No acute medical issues/traumatic injuries are present. (Wounds requiring closure or bleeding are not allowed)
02 - (☐) No unexplained mental status change(s) persist or intermittently recurred during encounter.
03 - (☐) BAC is less than 0.35 and candidate can tolerate oral fluids.
04 - (☐) Pulse is less than 120.
05 - (☐) Candidate compliant with medicines for chronic medical issues, or knows meds and doses and will take.
06 - (☐) Candidate has not taken medications outside normal dose *or* poison control did not recommend ED eval.
07 - (☐) No poison control consult was required *or* poison control recommendation and case info recorded above
08 - (☐) Candidate has no history of diabetes *or* BGL <300 with no evidence of ketoacidosis.
09 - (☐) Candidate performs daily living activities independently
10 - (☐) ALL Boxes (1-9) are checked *or* name of receiving facility staff member contacted who agrees to accept is recorded to right _____

[redacted]

Exclusion Criteria

- Acute medical issue or trauma with bleeding, need for wound repair
- BAC >0.35 or patient too intoxicated to take po
- Pulse >120
- Unexplained alteration in mental status
- Unable/unwilling to take medications for pre-existing conditions

Exclusion Criteria

- Has taken medication outside of prescription/recommended dose and cannot be cleared by poison center
- Can perform ADLs independently
- Blood glucose < 300 with no evidence of DKA

Alternative Destination

- 204 patients in a 12 month period were placed
- Mental health patients consume 14 ED bed hours on average (2,448 hours)
- Chest pain patients consume 3 ED bed hours on average
- Thus, we opened beds for 816 chest pain patients in the 12 month period
- This also saved ~$350,000 in total healthcare costs for this population

Alternative Destination

- Most recent observational data indicate an average length of stay of 35 hours in the crisis and assessment unit
- The actual savings for the alternative destination is not only the emergency department bed hours saved but also the in-patient bed hours for mental health “holds”

Alternative Destination

- Ambulance is returned to service <10 minutes 78% of the time
- Of patients screened:
  - 67% failed the screen
  - 20% successfully placed
  - 15% refused offer of alternative destination
- Safely increasing the proportion of alternative destinations is now a focus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Taking the Fall: Can We Treat and Release Those in Assisted Living Facilities?

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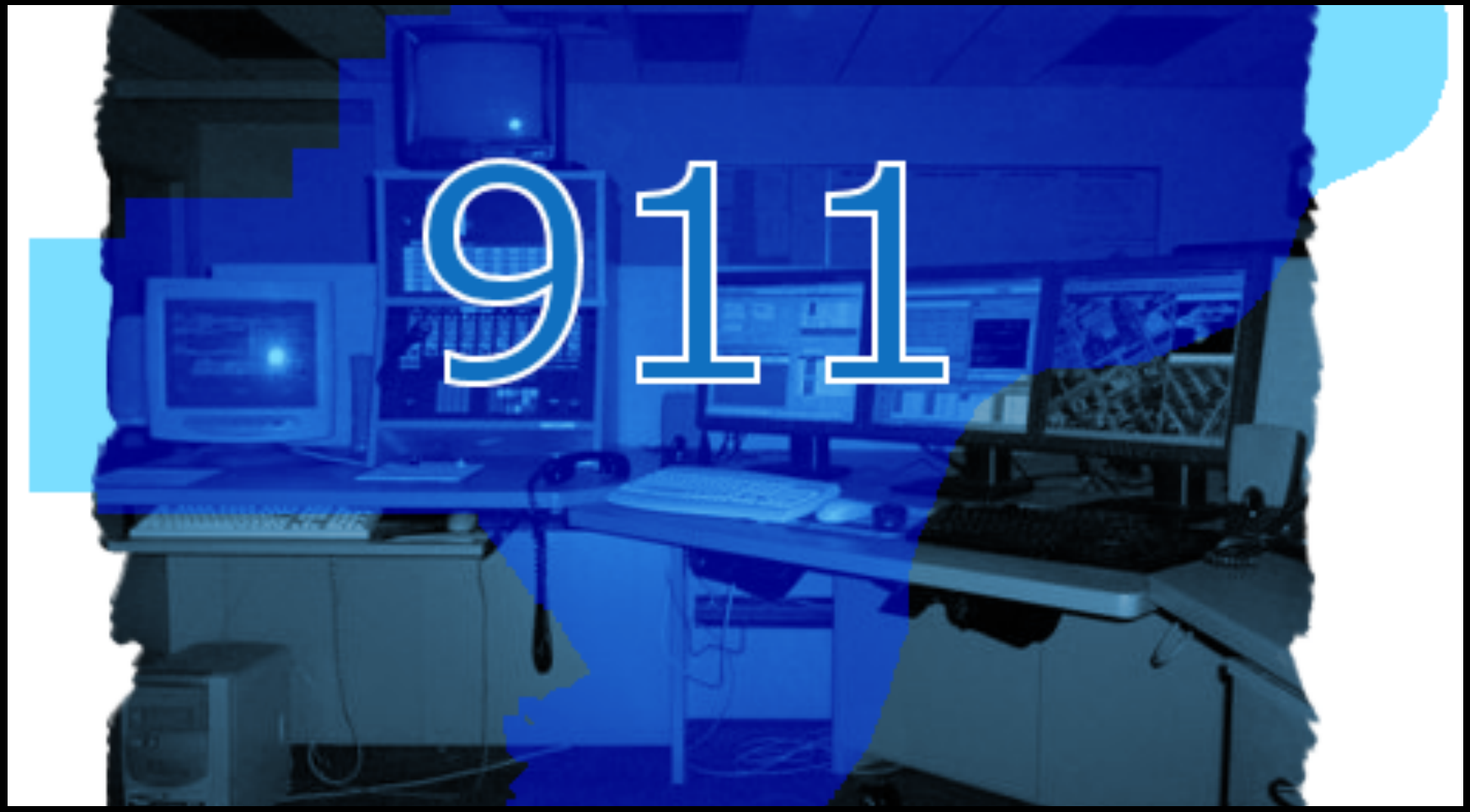
Calls



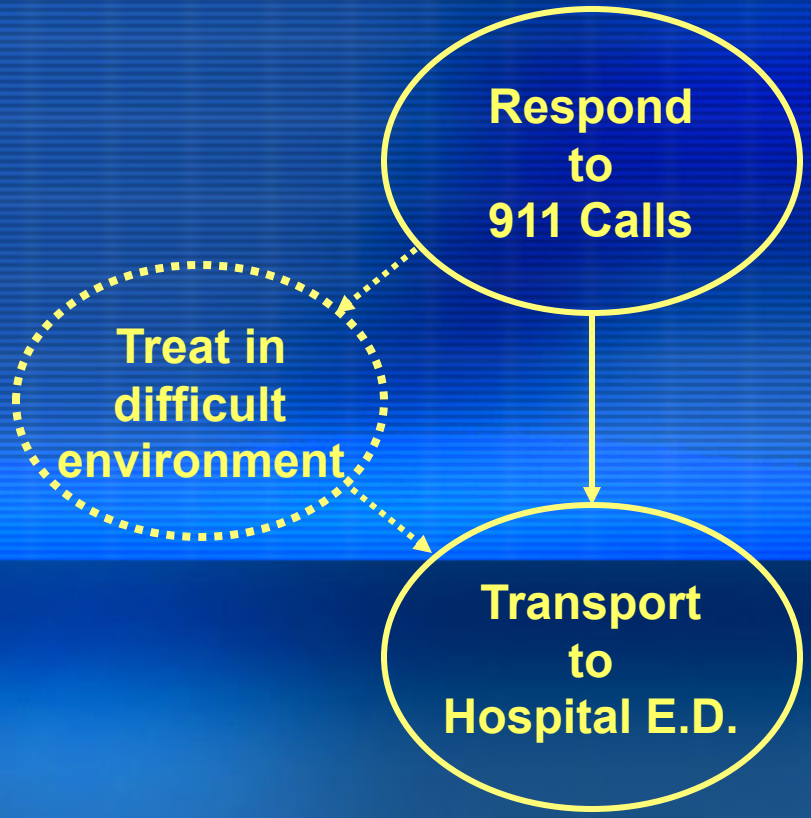
Falls

And Big Brass Balls

The Three R's

- **Respond:** Critical medical emergencies occur and require an experienced paramedic to mitigate
- **Redirect:** Not all patients need an emergency dept evaluation – experienced paramedics can help with destination decisions
- **Reduce:** Well-person checks for diabetic patients, CHF patients, etc.

Historical Scope of Service



Desired Scope of Service

Reduce 911 calls in Special Populations
- Repeat users (frequent flyers)
- Diabetes
- Pediatric Asthma
- CHF
- Homeless

Respond to 911 Calls

Treat in difficult environment

Transport to Hospital E.D.

Redirect
- Treat/release from scene
- Refer - get appointment
- Transport elsewhere

Falls In Assisted Living Facilities

- 1 to 5 transports per day for our EMS system
- Majority are patients who are “found down” with no obvious injury or complaint
- Risk creation strategy for the facility is to summon EMS for transport to the emergency department

Inclusion Criteria

- Patient suffers and apparent fall (17 card for those of you MPDS folk)
- Fall in assisted living facility (not including SNF at this point)
- Patient of Doctors Making Housecalls group
- Informed consent form is on the patient's chart

Exclusion Criteria

- Patient not under care of Doctors Making Housecalls
- Other emergency medical condition is identified – then dispatched based upon MPDS
- Advanced Practice Paramedic does not check en route within 45 minutes (rolls to non-emergent ambulance dispatch)

Transport Required

- Uncontrolled hemorrhage
- Open/dislocated fracture
- Acute neck pain
- Altered mental status compared with baseline
- Laceration requiring repair
- Abnormal vital signs compared with baseline

Transport Not Required

- Simple skin tear
- No complaint
- No external signs of trauma
- Hip pain with full range of motion and no change in ambulatory status

Discuss with On-Call DMH MD

- Patient utilizing anticoagulation
- Unclear spinal exam
- Patient requiring pain control beyond that previously on DMH orders
- Abnormal lab values
- “Border line vitals”
- Other uncertainty regarding need for transport

In All Cases

- Advanced Practice Paramedics have real-time access to the DMH Electronic Medical Record
- This includes the ability to schedule a follow-up visit within 24 hours in every case, with 12 hour follow available if indicated

Falls in Assisted Living Facilities

- IRB approval is in place to study all such transports for the past year:
  - Evaluate safety of a decision tree that would allow APPs to evaluate patients on-site and avoid unnecessary transports
  - Determine proportion of patients with any findings on evaluation that required intervention
  - Determine costs associated with the evaluation

Falls in Assisted Living Facilities

- 1500 such transports were made last year
- ~$2.5 million dollars in healthcare expense
- Evaluation of the first 150 of these patients, 81% did not require admission and were discharged from the emergency department

Falls in Assisted Living Facilities

- Prospective evaluation will begin soon (hopefully in next 6 months)
- Public/private partnership with Doctors Making Housecalls (DMH)
- No ambulance will be dispatched; rather, APP only to simple falls
- Common medical record with DMH
- On-going evaluation of safety and costs

Low Acuity Callers

- Data Driven triage score
  - 1 very ill/injured
  - 2 and 3 need prompt evaluation
  - 4 and 5 – can safely go to the waiting room
- We are working to implement this scoring mechanism
- ~20% of our transports are level 4 and 5 (~$3.5 million in transport charges per year)

Summary

- Better health: we are providing the right destination at the right time for the right patient – this is better care for the patients
- Better healthcare: we are conserving scare resources for the patients who need them while building surge capacity in both the prehospital and inhospital environments

Summary

- Lower costs:
  - Alternative Destinations for SA/MH = ~ $350,000/year
  - Falls in Assisted Living = ~$1.75 million/ year
  - Low acuity transports = over $1.75 million/ year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