



An evaluation of costs and benefits of pre-hospital transport by police for urban trauma patients

Sara Jacoby¹, PhD, MPH, RN Elinore Kaufman², MD, MSHP, Daniel Holena², MD, MScE, Charles Branas³, PhD

1. Department of Family and Community Health, University of Pennsylvania School of Nursing
2. Department of Traumatology and Surgical Critical Care, University of Pennsylvania School of Medicine
3. Department of Epidemiology, Mailman School of Public Health, Columbia University

Philadelphia Police Directive on Hospital Cases 03/08/1996

2. PROCEDURE

A. Police personnel will transport:

1. Persons suffering from a serious penetrating wound, e.g., gunshot, stab wound, and similar injuries of the head, neck, chest, abdomen, and groin to the nearest accredited trauma center. Transportation of such cases will not be delayed to await the arrival of Fire Department paramedics.

NOTE: Persons suffering from blunt trauma or a violent injury to the body (e.g. closed trauma to the head or chest as may result from a motor vehicle accident or a fall) should be transported to the nearest accredited trauma center by Fire Department paramedics because of the level of treatment that can be provided by the Fire Medics.

DIRECTIVE 3.14 - 1

“Scoop and run” outcomes

- ◆ Survival is equivalent to EMS
- ◆ Philadelphia accounts for 60% of US police transport

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The Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD
Department of Health Policy and Management (CCB, doctoral candidate)

Hospital of the University of Pennsylvania, Philadelphia, PA
Department of Trauma/Surgical Critical Care (RFS)

Medical College of Pennsylvania, Philadelphia, PA

Urban Trauma Transport of Assaulted Patients Using Nonmedical Personnel

Charles C. Branas, MEMS, Ronald F. Sing, DO, Steven J. Davidson, MD


■ **ABSTRACT**

Objective: To describe one urban trauma transport system to clarify the impact of transport by nonmedical personnel on patient outcome.

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Police transport versus ground EMS: A trauma system-level evaluation of prehospital care policies and their effect on clinical outcomes

Michael W. Wandling; Avery B. Nathens; Michael B. Shapiro; Elliott R. Haut



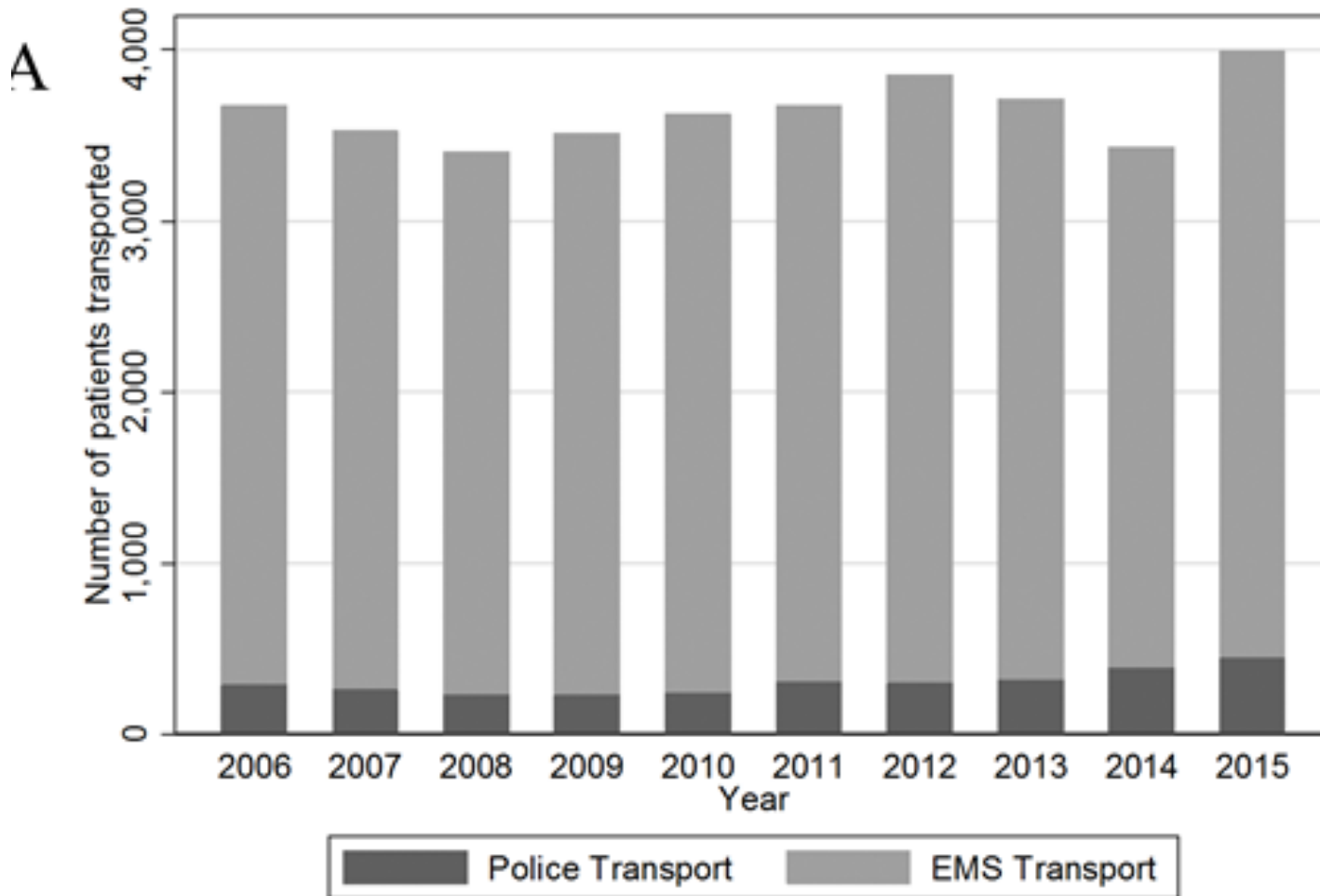
Beyond survival and hospital outcomes?

- **Intra-city emergency medical care resource distribution**
- **Experience of the injured**
- **Costs and benefits for first responders within and outside trauma centers**

Multi-method approach: Philadelphia as case-study

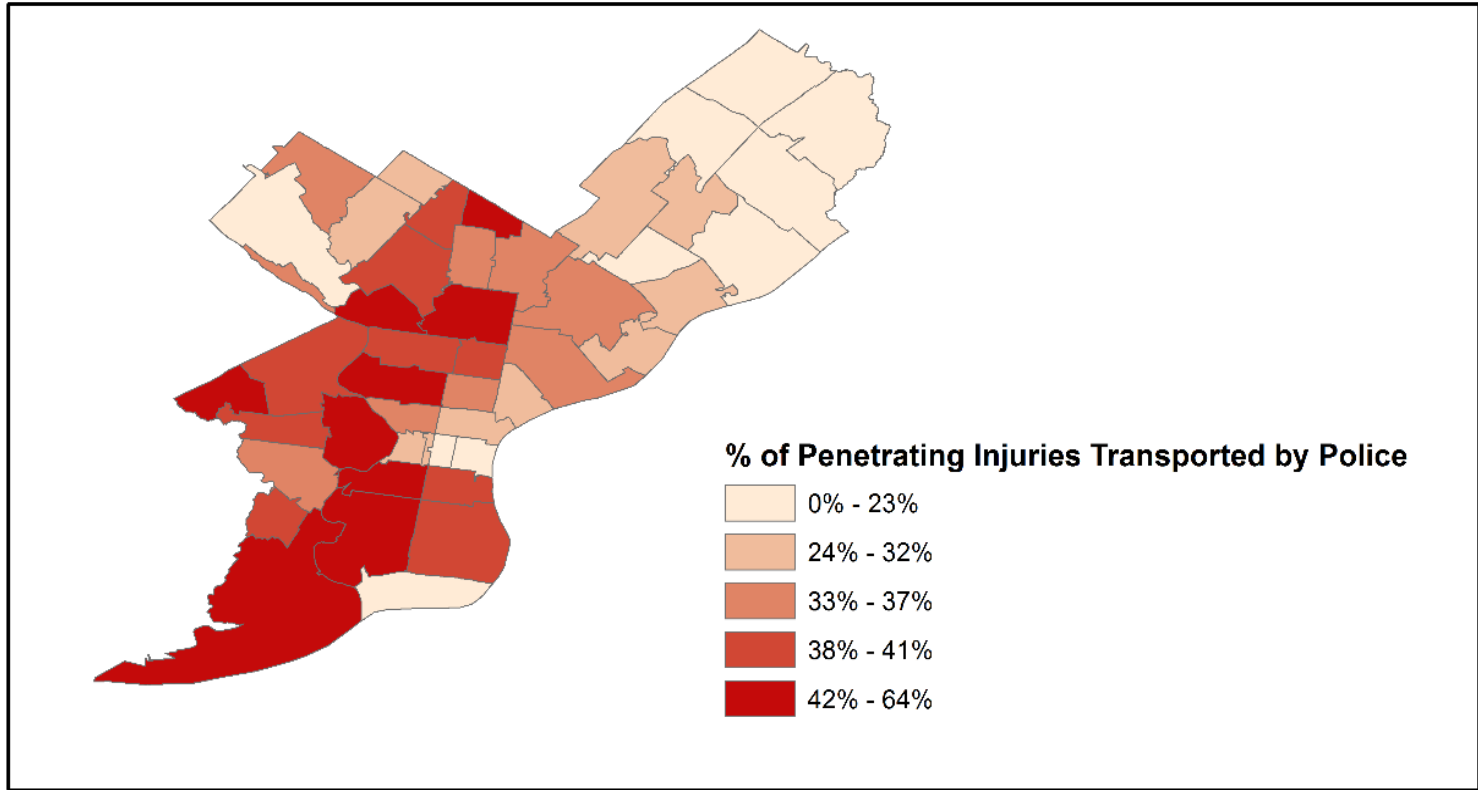
1. To identify the impact of regional social demographic factors and crime incidence on hospital transport for penetrating injury, 2006-2015
 - Geospatial Analysis
 - Sources: PTOS, US Census, ACS, PPD crime data
2. In-depth description of the experience of stakeholders
 - Sources: Semi-structured interviews with patients, police, and trauma clinicians in receiving emergency departments

Transport of victims of traumatic injury 2006-2015

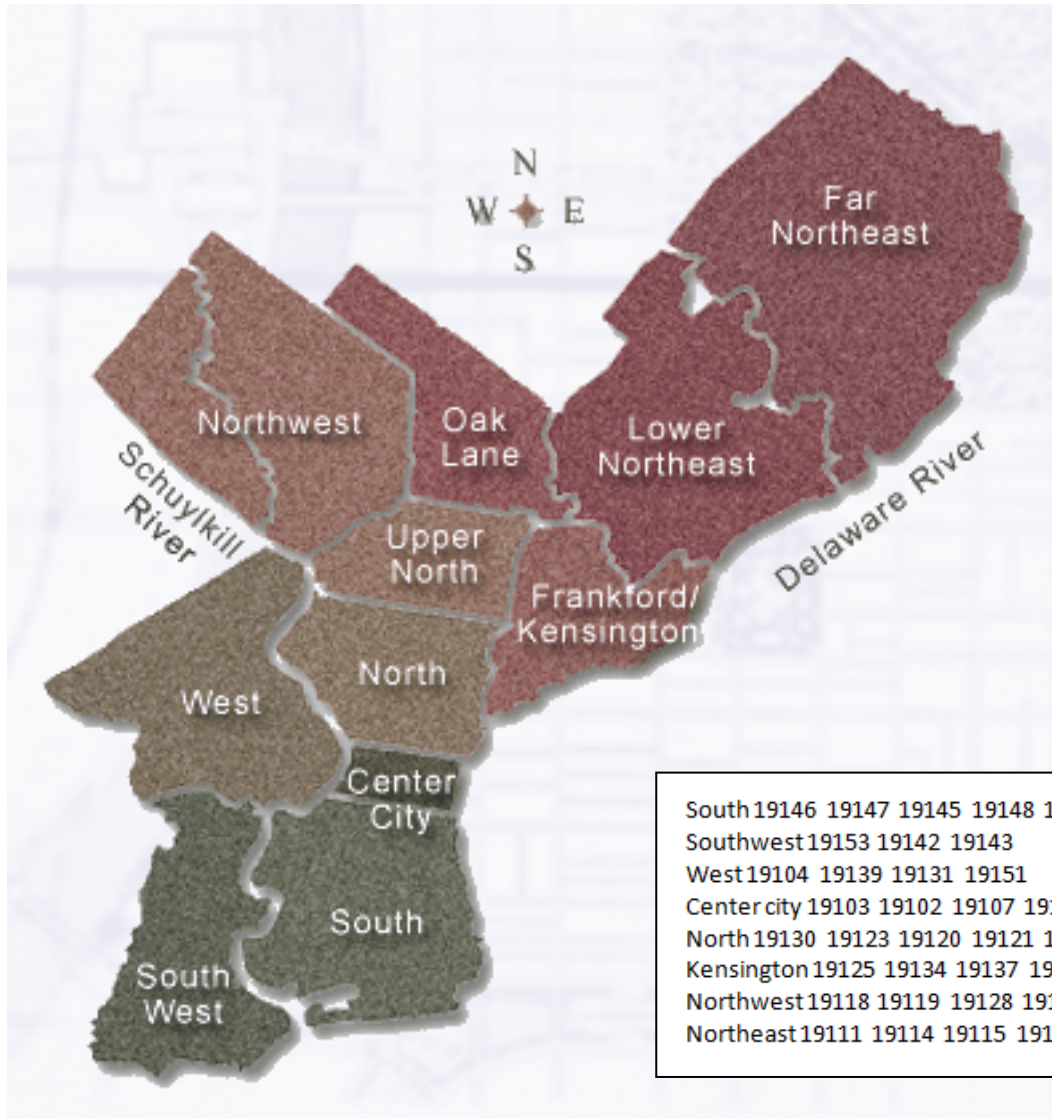


Patient factors predicting police transport

- **Male gender**
- **Black race, Latino ethnicity**
- **Younger age (average age 24 years versus 28 years)**
- **Uninsured at admission**
- **Higher injury severity**
- **Firearm injury**
- **Injury at night**
- **Injury outdoors**



Philadelphia planning regions



Regional factors predicting police transport

POLICE TRANSPORT	Region fixed effects				Region mixed effects			
	OR	P>z	95% low	95% high	OR	P>z	95% low	95% high
<u>Patient/Injury</u>								
Time to TC	0.97	0.047	0.94	1	0.99	0.497	0.96	1.02
Outdoor Location	2.22	0.000	1.92	2.55	3.45	0	2.88	4.13
Race (Versus White)								
Black	1.51	0	1.29	1.76	1.5	0	1.2	1.88
Hispanic/	1.53	0	1.25	1.87	1.38	0.023	1.05	1.82
Asian	1.18	0.422	0.79	1.75	1.35	0.248	0.81	2.26
Other	1.53	0	1.22	1.9	1.73	0	a1.28	2.35
Female (versus Male)								
Firearm	6.38	0	5.56	7.32	1.58	0.002	1.19	2.1
year	1.12	0	1.1	1.13	1.18	0	1.16	1.2
late-night (versus day)	1.36	0	1.23	1.51	1.48	0	1.3	1.69
age_in_yrs	0.99	0	0.98	0.99	1	0.067	0.99	1
Low GCS	1.05	0.401	0.93	1.19	1.18	0.031	1.02	1.37
hypotensive	1.36	0	1.19	1.54	1.16	0.036	1.01	1.33
Injury Severity Score								
assault	1	0.232	0.99	1	1	0.288	1	1.01
assault	1.61	0	1.51	1.73	1.32	0	1.15	1.51
<u>Neighborhood</u>								
South	3.03	0	1.84	5				
Southwest	2.18	0.003	1.3	3.66				
West	2.26	0.001	1.37	3.74				
Olney/Oak Lane	1.84	0.016	1.12	3.02				
Upper North	2.36	0.001	1.45	3.85				
Lower North	2.33	0.001	1.4	3.87				
Kensington	2.59	0	1.54	4.34				
GT/MA/CH	2.43	0.001	1.42	4.16				
Rox/Man	1.18	0.744	0.44	3.13				
Near NE	1.75	0.052	1	3.06				
Far NE	1.36	0.302	0.76	2.4				
<u>Region Characteristics</u>								
# fire stations					1.32	0	1.2	1.44
Aggravated assault rate					0.74	0.062	0.54	1.01
Narcotic arrest rate					1.11	0.459	0.85	1.45
Percent Black population					1.18	0.005	1.05	1.32
Vacant housing units					1.4	0	1.2	1.64
Percent living below pov. rate					0.96	0.716	0.77	1.2

Stakeholder analysis

- ◆ **6 patients transported by police**
 - 22-43 years of age, day 2 of hospitalization following GSW
- ◆ **10 police who have transported injured people**
 - 1-20 years experience in Philadelphia, districts in neighborhoods with significantly higher rates of police transport
- ◆ **6 clinicians at level I trauma center**
 - 3 trauma nurses: 6-12 years experience in Philadelphia EDs
 - 3 trauma surgeons: 2-12 years experience in Philadelphia EDs

Shared Benefits across stakeholder groups

- ◆ **Faster transport/Life-saving**
- ◆ **Positive/appreciated role for police**

Patient

Some cops wanted me to wait, but I didn't have it in me to wait too long. So fast like that, and taking me themselves, that kept me alive and bought some time.

Police

I signed up for this job to make a difference and my thing is, if you save one person, you made a difference. I feel as though I have saved six, and that means I am making a tremendous difference.

Clinician

I have patients that in my mind would not have survived if the police had not transported them here.

Different perceived cost: Patients

- ◆ **Feels insecure and painful**
- ◆ **No opportunity to receive care enroute**

They just were saying, "Hold on," but there is nothing back there to hold onto. They were driving as fast as they can to get to the hospital and you are in the back just sliding around.

Police

- ◆ **Physical strain of transfers in and out of vehicles**
- ◆ **Blood and exposure to potentially infectious bodily fluids**
- ◆ **Lack of expertise in triage and injury assessment**

It's kind of like one big fish in a sardine can. Once you get him in that is fine, then you get him to the hospital. But that's another problem to get him out again.

So if someone has some type of disease or something, we will get blood on us, on our uniforms, and we have to buy new uniforms.

Clinicians

◆ Nurses

- patient's physical stability in back of a police vehicle
- police blood exposure

My biggest fear is the fact that, police officers do not have blood borne pathogen training.

◆ Surgeons

- inappropriate triage/transport of blunt injured patients
- lack of notification

It increases the number of the people who are in the trauma bay, which I think increases the chaos, increases the noise, decreases the team's ability to function well together.

Perspectives on optimization

◆ Patients

- more EMS on “standby”
- alterations to police vehicles

◆ Police

- equipment for blood exposure
- training

◆ Clinicians

- protective equipment
- Enhanced notification of police drop offs

Implications

- ◆ **Potential mental health consequences across stakeholder groups and the communities most impacted by policy implementation**
- ◆ **Opportunity for collaborative policy refinement incorporating police, community and provider perspectives**

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