Demographic and Treatment Patterns for Infections in Ambulatory Settings in the United States (2009)

Larissa May MD, MSPH, Peter Mullins, MA, Jesse Pines, MD, MBA, MSCE

Department of Emergency Medicine, The George Washington University Medical Center, Washington, D.C.

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

Background

- Acute infection is a common reason for seeking care in ambulatory settings, including emergency department (ED) and outpatient clinics.
- Care consists of provider evaluation, diagnostic tests to rule in or rule out other diseases, and procedures or medications
- Choice of care settings depends upon symptom severity, access, timeliness, perceived quality, and available services

Purpose and Hypothesis

- We explored demographics and care in adults with UTI, URI, and SSTI
- We compared EDs to outpatient clinic settings in the U.S. in 2009 using nationally representative data
- While both settings see similar infections, there may be differences in management, with implications for outcomes, quality, and cost.

Scan QR code for PDF copy of this poster or visit www.gwumed.edu/research

Methods

- Data from two large surveys of ambulatory care in 2009 by the National Hospital Ambulatory Care Survey (NHAMCS) for ED encounters and the National Ambulatory Care Survey (NAMCS) for outpatient clinic visits for adults 18 and older.
- International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9) codes used to identify encounters with UTI, URI and SSTI as primary diagnosis
- To maximize comparability, we excluded patients who were admitted to the hospital (NHAMCS) or referred to an ED (NAMCS)
- Data analyses conducted in Stata, v. 12 (College Station, TX) using complex survey command package. T-test and Chi-squared tests used to compare outpatient v. ED, using survey weights.

Results

Urinary Tract Infections	Emergency Department	Outpatient Clinic	P-value
Total (proportion of all UTI visits)	1,929,005 (23.4%)	6,301,074 (76.6%)	.001
Demographics			
Mean age (95% CI)	45.2 (42.9, 47.5)	53.9 (50.2, 57.6)	.04
Race/Ethnicity			
White	70.5%	88.2%	.005
Black	25.8%	9.9%	
Payer Status			
Private insurance	40.8%	62.7%	.001
Medicare	24.0%	34.5%	
Medicaid	26.1%	14.4%	
Patient's primary care physician?	N/A	55.3%	

Skin and Soft Tissue Infections	Emergency Department	Outpatient Clinic	P-value
Total (proportion of all SSTI visits)	2,253,353 (29.7%)	5,331,245 (70.3%)	.001
Demographics			
Mean age (95% CI)	42.7 (40.6, 44.9)	54.6 (50.9, 58.3)	.001
Race/Ethnicity			
White	74.8%	90.5%	.005
Black	23.4%	9.3%	
Payer Status			
Private insurance	37.2%	66.0%	.001
Medicare	15.2%	30.3%	
Medicaid	22.3%	5.8%	
Patient's primary care physician?	N/A	59.4%	

Upper Respiratory Tract Infections	Emergency Department	Outpatient Clinic	P-value
Total (proportion of all visits)	4,090,874 (11.9%)	30,331,990 (88.1%)	.001
Demographics			
Mean age (95% CI)	35.8 (34.7, 37.0)	47.3 (45.4, 49.2)	.001
Race/Ethnicity			
White	66.7%	85.8%	.001
Black	29.1%	9.5%	
Payer Status			
Private insurance	33.1%	73.9%	.001
Medicare	9.7%	17.6%	
Medicaid	29.8%	9.5%	
Patient's primary care physician?	N/A	67.7%	

UTI	Emergency Department	Outpatient Clinic	P-value
Resource Utilization (proportion receiving service)			
Blood Labs	56.0%	17.5%	.001
Urinalysis	87.2%	74.7%	.001
Any Imaging	34.1%	15.3%	.001
CT	14.1%	3.6%	.005
X-ray	21.4%	3.8%	.001
Weekend or non-business hours	71.0%	N/A	N/A
Commonly Used Medications for UTI (proportion receiving medication)			
Trimethoprim	19.2%	9.1%	.06
Nitrofurantoin	10.9%	14.8%	.08
Cephalosporin	14.6%	6.2%	.02
Anti-emetics	22.1%	5.0%	.001
Narcotics	25.7%	2.0%	.001
Other analgesics	20.3%	4.2%	.001
Any Antibiotic	**89.6%**	**73.7%**	**.26**

SSTI	Emergency Department	Outpatient Clinic	P-value
Resource Utilization (proportion receiving service)			
Blood Labs	25.2%	22.2%	.08
Any Imaging	18.2%	7.2%	.001
X-ray	13.0%	3.8%	.001
Incision and Drainage	22.9%	N/A	N/A
Weekend or non-business hours	63.9%	N/A	N/A
Commonly Used Medications (proportion receiving medication)			
Cephalosporins	23.8%	13.9%	.06
Trimethoprim	34.7%	14.2%	.02
Narcotics	34.0%	8.9%	.001
NSAIDs	14.2%	5.7%	.007
Any Antibiotic	**74.4%**	**39.0%**	**.18**

URI	Emergency Department	Outpatient Clinic	P-value
Resource Utilization (proportion receiving service)			
Blood Labs	23.8%	15.5%	.01
Any Imaging	30.7%	9.7%	.001
CT	4.2%	1.5%	.004
X-ray	27.2%	5.0%	.001
Ultrasound	0.2%	0.4%	.38
Weekend or non-business hours	67.5%	N/A	N/A
Commonly Used Medications (proportion receiving medication)			
Fluoroquinolones	4.8%	9.6%	.006
Cephalosporins	9.1%	4.4%	.009
Beta agonists	12.5%	4.0%	.001
Antipyretics	14.5%	6.2%	.001
NSAIDs	23.8%	6.5%	.001
Any Antibiotic	**53.6%**	**50.1%**	**.62**

Conclusions

Significant demographic differences between settings; greater proportion of black, Medicaid, and uninsured patients seeking ED care

- ED patients younger by an average of >10 years
- Greater use of diagnostic resources in EDs
- Substantial broad-spectrum antibiotic use for uncomplicated infection suggest need for stewardship
- Sampling/coding errors could have led to over or underestimation of specific diagnoses

Disclosures

•This publication was supported by Award Numbers UL1RR031988 and KL2 RR031987 from the NIH National Center for Research Resources. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Center for Research Resources or the National Institutes of Health.