



Abdominal Pain in Older Adults Presenting to US Emergency Departments

Rachel Wu
Mentor: Ari Friedman, MD, PhD

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Why care about abdominal pain in the ED?

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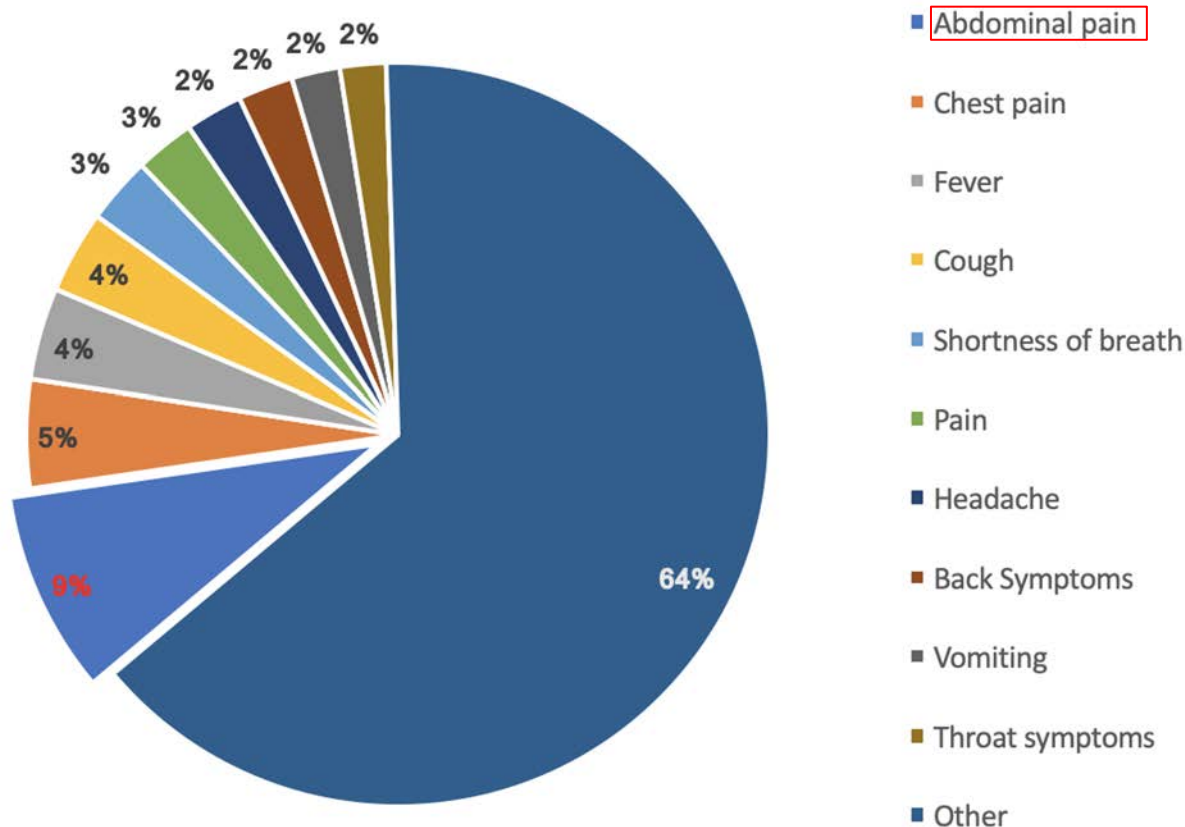
NHAMCS, R

04 Conclusions

Using the results, lessons learned, future steps

Abdominal pain is the #1 reason for ED

Ten principal reasons for ED visits by symptom for all ages US 2017



#1

Chief complaint for
≥65 years old

5.3%

Died within
60 Days

25%

of all older ED
patients return
within 30 days

The Central Hypothesis

“There are identifiable ways to improve the evaluation and management of abdominal pain among older patients in the emergency department”

Current Research on Abdominal Pain



Research on individual diseases that cause abdominal pain



How to treat once ailment is known (i.e. medical procedures, prescriptions)



Treating abdominal pain is tricky because of lack of specificity



Treating abdominal pain as a syndrome...a new frontier?



What if we treated abdominal pain like we treat chest pain?

Challenges with Diagnosing Abdominal Pain in Older Adults



Cognitive Impairment

History Taking

Confusion over origin of symptom

Obscurity over onset of symptom



Higher Comorbidities

Raises risk of a given condition

Gives rise to new conditions (e.g. AAA)

Increases diagnostic complexity



Symptoms Presentation

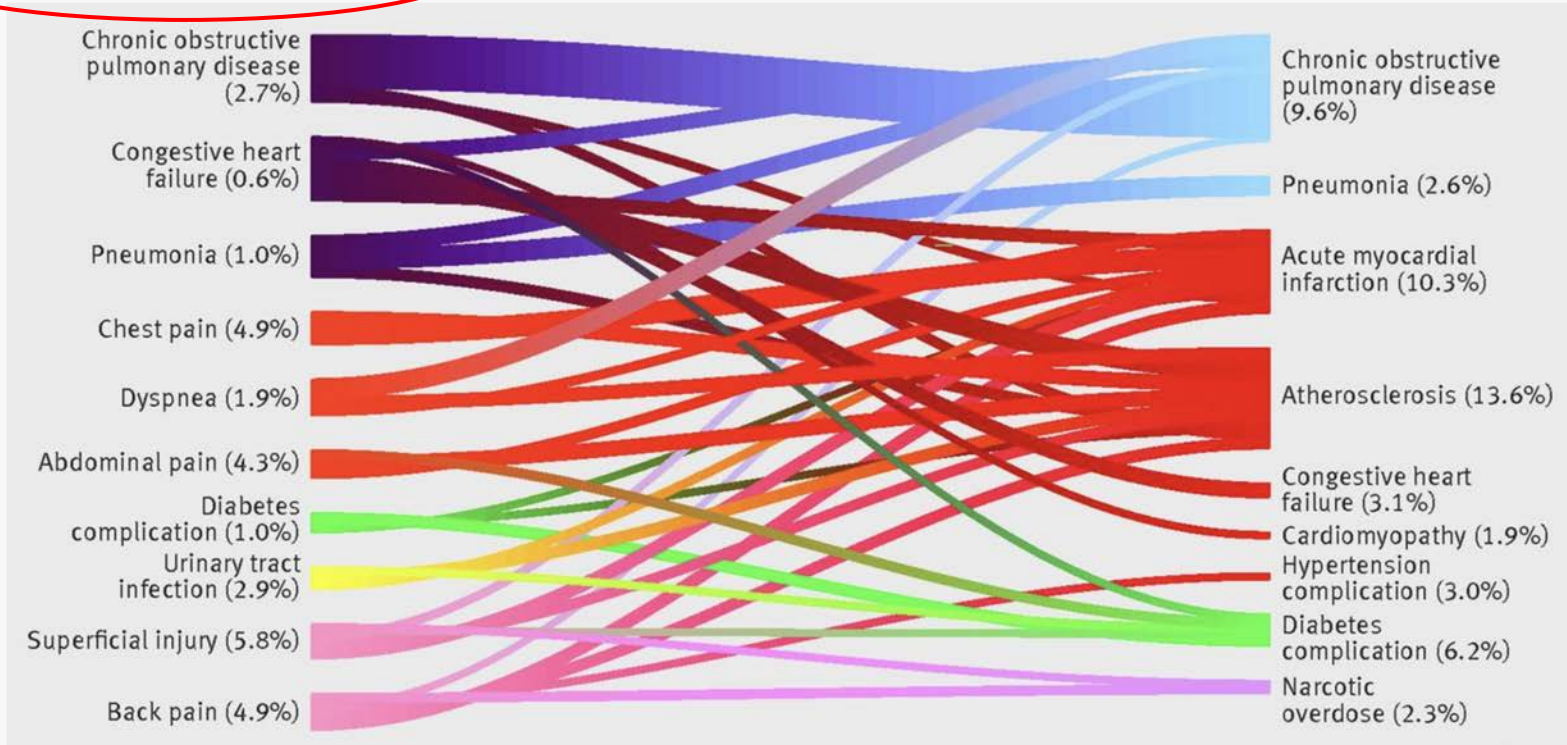
Vague and milder symptoms compared to presentation in younger patients

Physical examinations are less useful because of physiological changes

Causes of death among Medicare patients discharged from ED

Discharge diagnosis from ED

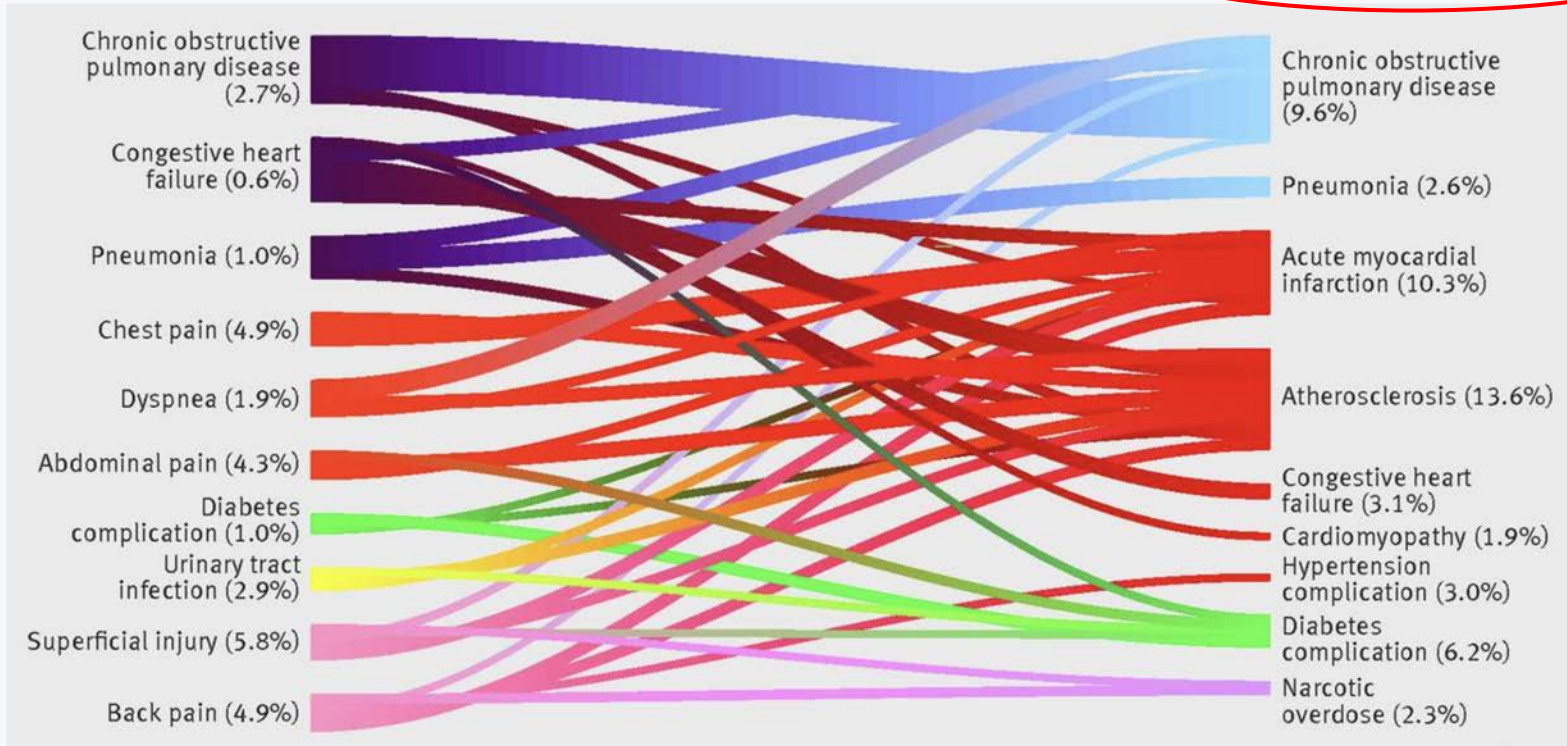
Top Causes of Death



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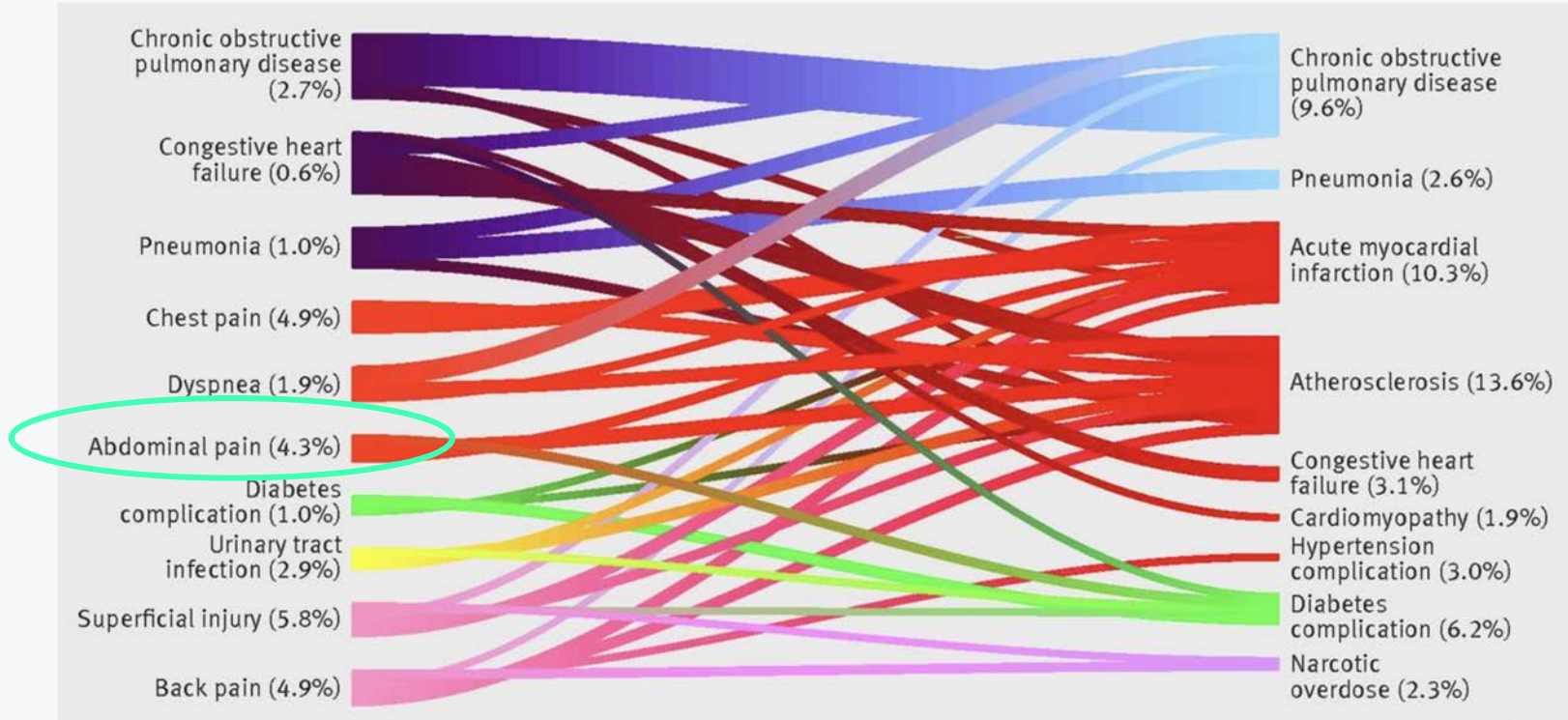
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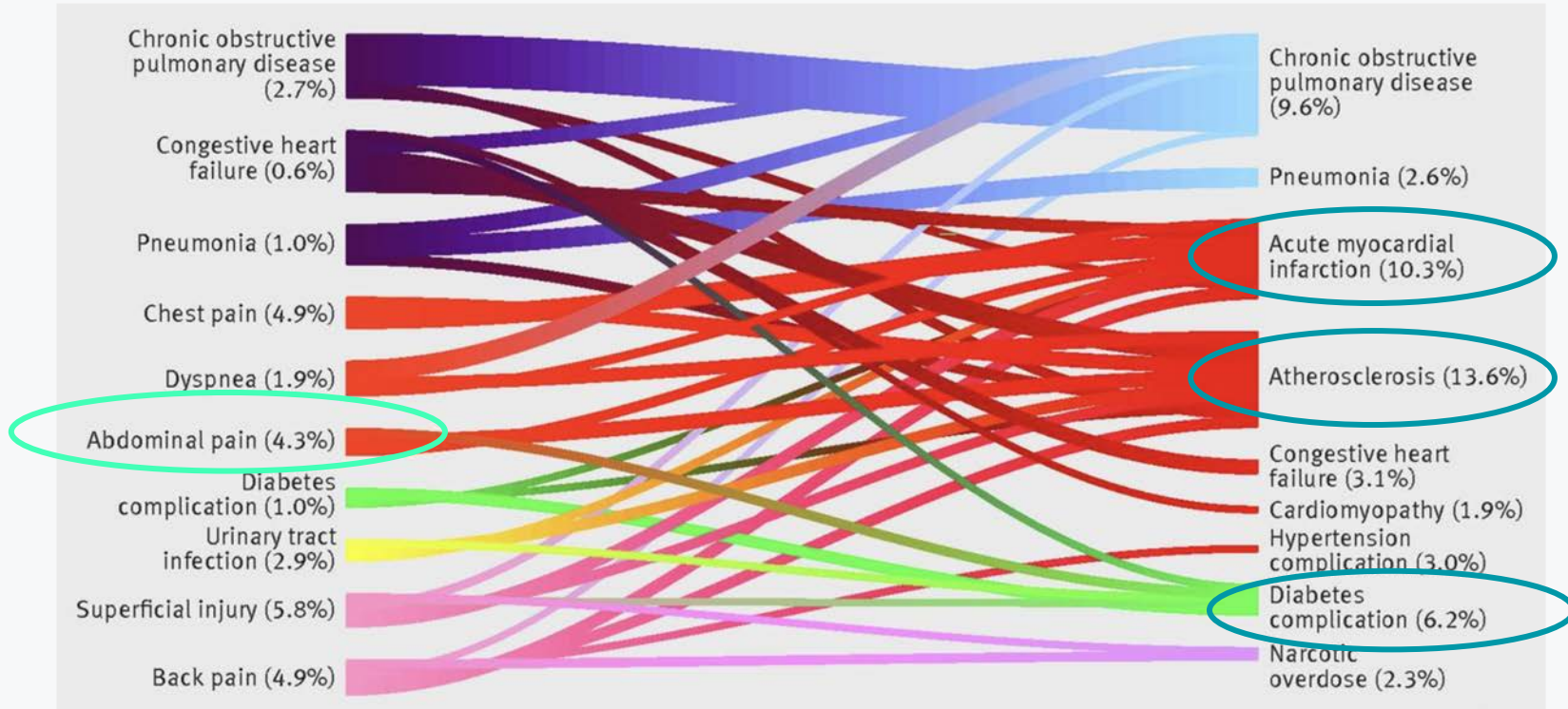
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Deaths are preventable

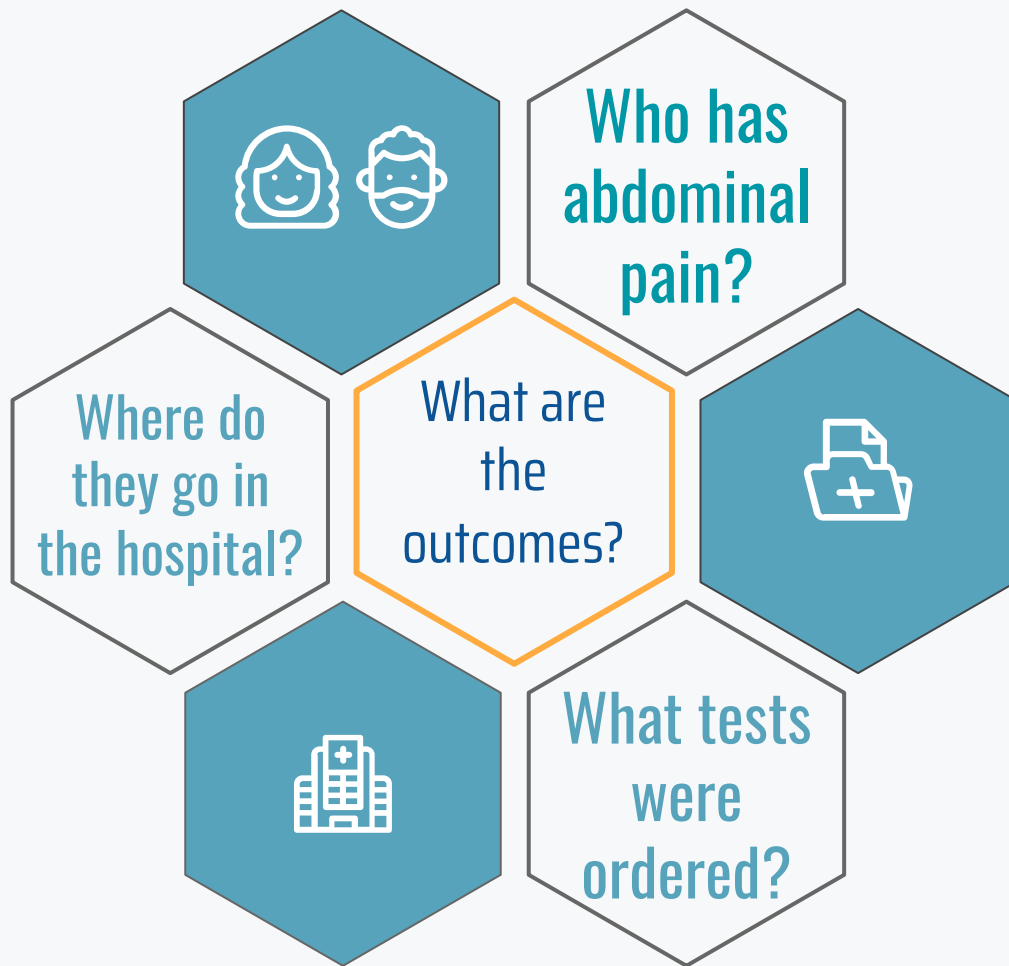
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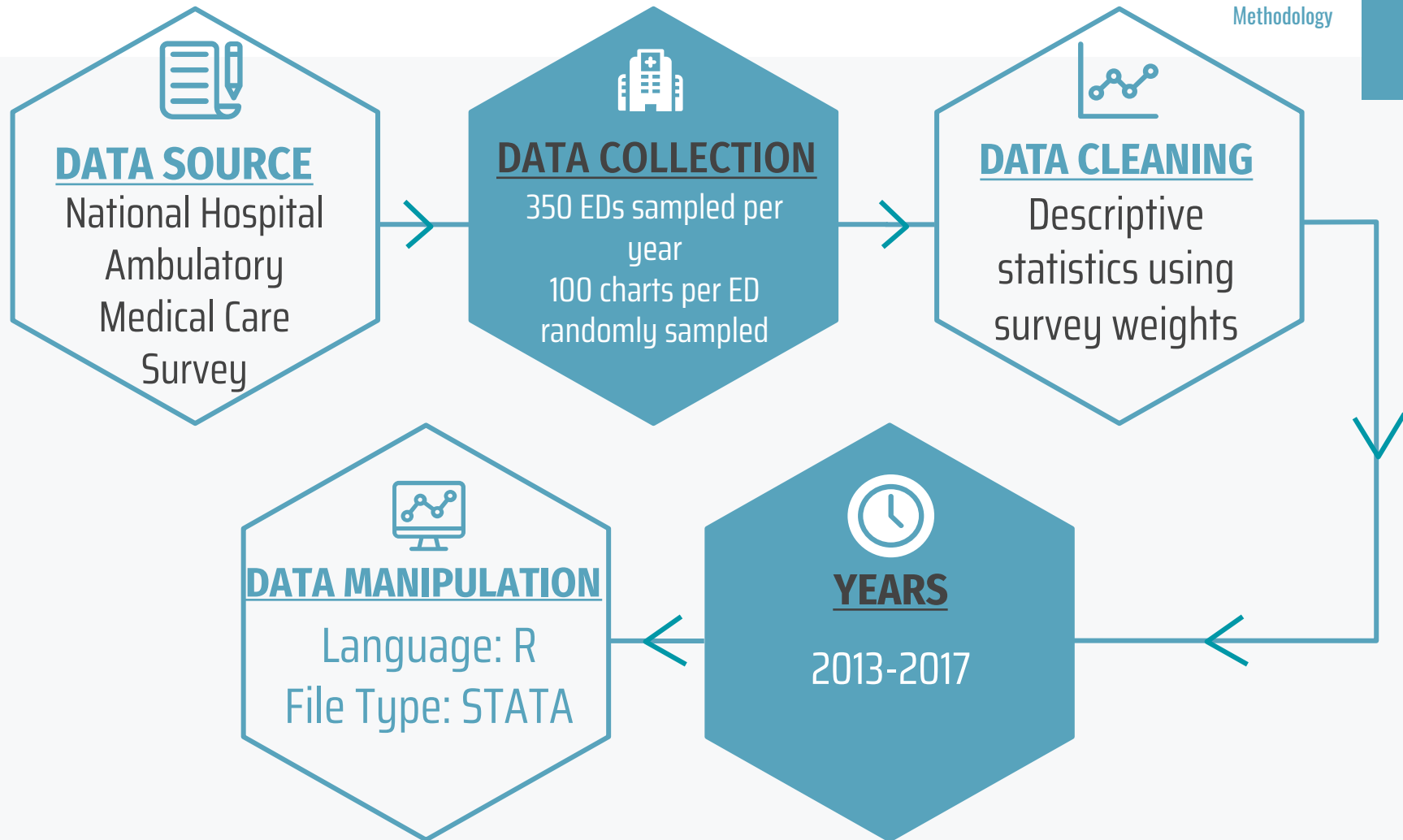


Obermeyer 2017, Early death after discharge from emergency departments

Characterize and Evaluate Variability



Methods



Results

Table 1: Who is coming into the ED and what happened?

Variable	No abdominal pain	Abdominal pain	P
Age (years), M (SD)	76.7 (8.2)	76.2 (7.7)	0.12
Race/ethnicity, % (SE)			0.32
Non-Hispanic White	76.2 (1.4)	73.1 (2.1)	
Non-Hispanic Black	12.7 (1.0)	14.2 (1.7)	
Hispanic	8.3 (0.7)	9.6 (1.4)	
Sex, % (SE)			0.08
Female	57.7 (0.6)	61.0 (1.8)	
Residence Type, % (SE)			0.003
Homeless	0.2 (0.1)	0.1 (0.1)	
Nursing home	8.5 (0.3)	4.5 (0.9)	
Private residence	86.2 (0.7)	90.7 (1.5)	
Triage status, % (SE)			<0.001
1 = Immediate	1.0 (0.1)	0.1 (0.1)	
2 = Emergent	14.7 (1.2)	7.0 (1.1)	
3 = Urgent	38.0 (1.9)	56.1 (3.2)	
4 = Semi-urgent	15.1 (1.0)	9.3 (2.0)	
5 = Nonurgent	2.1 (0.3)	1.2 (0.5)	
Multimorbidity, M (SD) %	59 (0.49)	54 (0.50)	0.02
Discharged, % (SE)	65.5 (1.2)	65.7 (2.2)	0.98
Admitted to Surgery, % (SE)	0.8 (0.1)	3.6 (0.9)	<0.001
Admitted to Critical Care, % (SE)	4.2 (0.5)	2.2 (1.0)	0.17
Died at any point, % (SE)	1.6 (0.2)	0.9 (0.4)	0.25
Dead on arrival, % (SE)	0.1 (0.0)	0.0 (0.0)	0.44
Died in ED, % (SE)	0.6 (0.1)	0.1 (0.1)	0.06
Died in Hospital, %	4.0%	3.3%	0.56

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Most common cosymptoms with abdominal pain

Symptom	Count	percent
None	636	62.048780
Other	368	35.902439
Nausea	175	17.073171
Vomiting	142	13.853659
Diarrhea	72	7.024390
Constipation	59	5.756098
Pain, site not referable to a specifi...	46	4.487805
Back symptoms	36	3.512195
Stomach and abdominal pain, cramps an...	23	2.243902
Chest pain and related symptoms (not ...	22	2.146341
Fever	19	1.853659
Shortness of breath	18	1.756098
Appetite, abnormal	17	1.658537
Other symptoms or changes in bowel fu...	17	1.658537
Hypertension	16	1.560976
Change in abdominal size	15	1.463415

Table 3. Diagnostic management of abdominal pain in EDs, by selected disposition, NHAMCS 2013-2017 ≥65 years.

	Discharged	Admitted	Surgery
Total ED Visits ≥65	678	251	33
	% (SE)	% (SE)	% (SE)
Liver Enzymes	17.2 (2.3)	27.3 (3.9)	27.1 (10.8)
Lactate	6.4 (1.1)	9.9 (2.7)	8.4 (5.9)
Abdominal CT	52.4 (2.9)	63.8 (4.2)	68.0 (10.0)
Ultrasound	9.0 (2.0)	9.2 (2.5)	2.4 (1.9)
X-ray	30.6 (2.5)	46.8 (5.8)	32.1 (9.5)
Any Imaging	78.5 (1.9)	83.8 (3.0)	85.3 (5.8)
EKG/ECG	34.9 (2.4)	53.7 (5.0)	48.2 (10.6)
Opiate Analgesic	42.6 (2.7)	47.0 (5.1)	56.2 (9.7)
Non-Opiate Analgesic	11.4 (1.6)	4.4 (1.3)	4.1 (4.1)
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Causes of death among Medicare patients discharged from ED

Discharge diagnosis from ED

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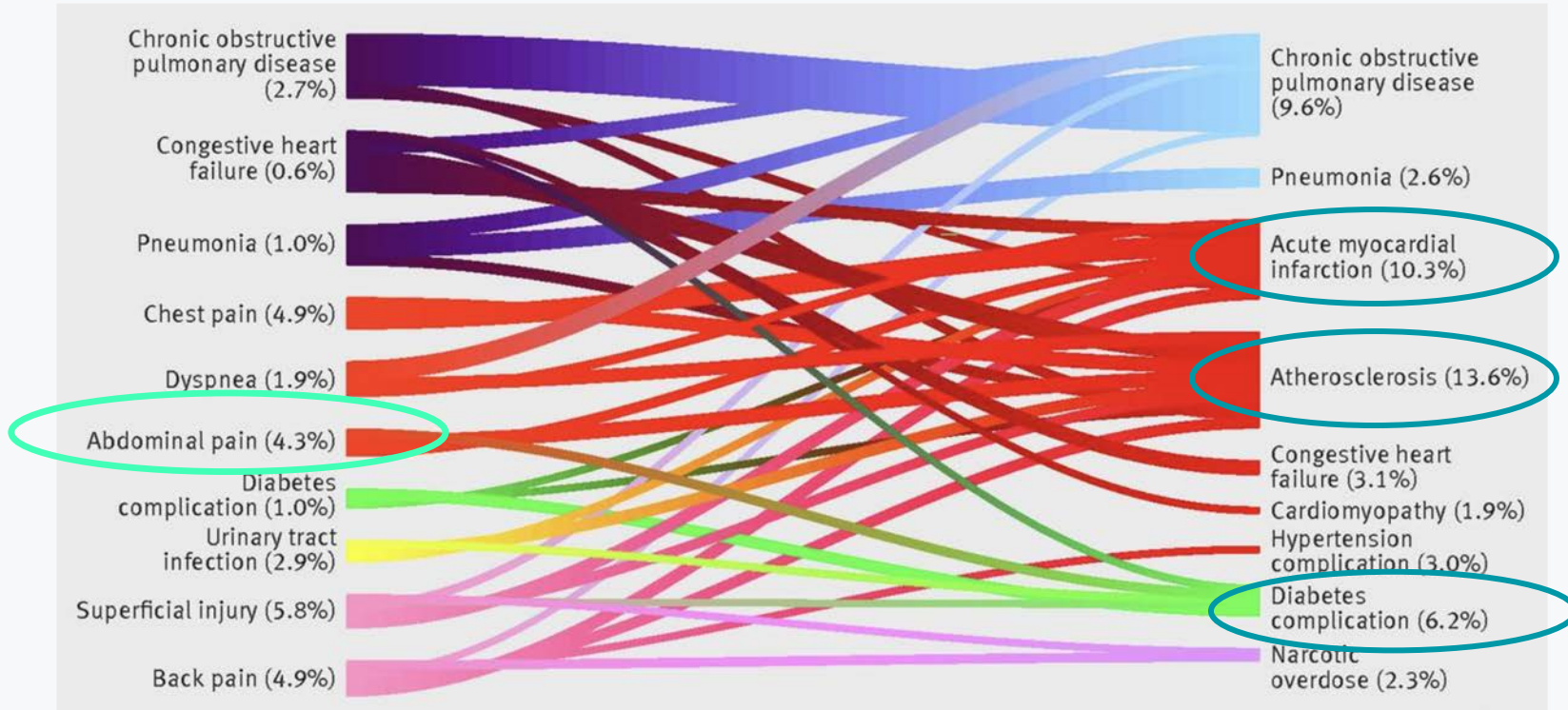


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Conclusion



Continue working on cosymptoms table
to make it more readable



Write a Descriptive Paper



Identifying variability within the
vulnerable populations: what are their
outcomes



Code first,
optimize
last

You can find
almost
anything on
StackOverflow

Navigating
virtual
collaboration:
when to ask
for help

Say yes,
especially if
you have
never done
it before

Research path:
coding versus
writing

PhD Path

THANKS

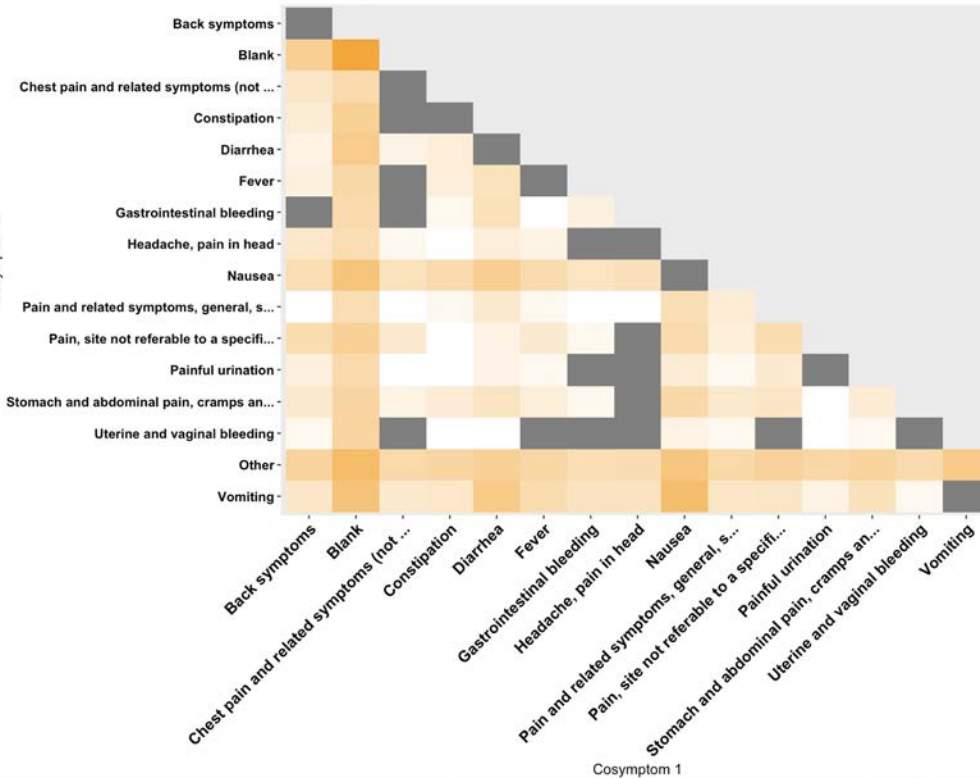
Ari B Friedman
Angela Chen
Joanne Levy
Evelyn Fabian
Ann Fischer



Comparison: All Ages vs Older Adults

Frequency of Symptoms Presenting Together when Chief Complaint = Abdominal Pain

Frequency of Top 15 Coexisting Symptoms with Chief Complaint of Abdominal Pain



Frequency of Top 15 Coexisting Symptoms with Chief Complaint of Abdominal Pain in Older Adults

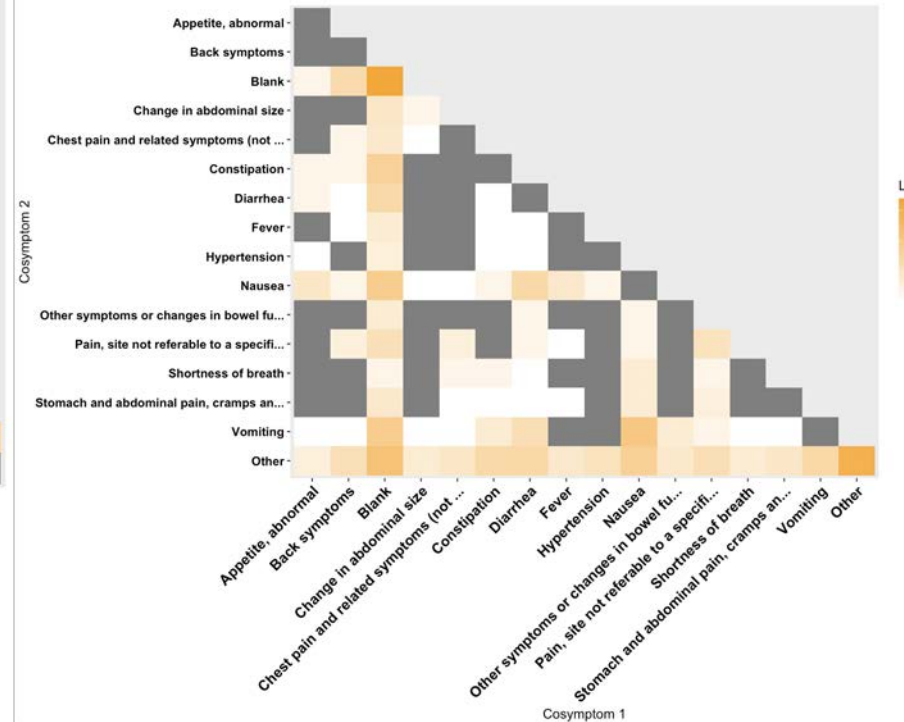


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