

Background

Chest pain is the second most common reason patients seek care in the Emergency Department (ED) and accounts for over 7 million visits each year in the United States¹

Accurately identifying ED patients with heart attacks or unstable angina has been difficult and time intensive. The average missed heart attack rate in the US is 2%. National guidelines recommended admission on all ED patients with chest pain

National benchmarks report a 35.2% rate of admission, transfer, or death in patients who present to the ED with chest pain²

Over the past 6 years, our ability to accurately determine an individual patient's risk for heart attack and unstable angina has markedly improved through:

- The development of well validated risk stratification tools
- The use of ultra sensitive blood tests to identify early heart damage

In November of 2013 the EM physicians at NTX BSW implemented an accelerated diagnostic protocol (ADP) to allow rapid identification of patient who were low risk for heart attack

- Through multiple education modalities (live lectures, e-learning, local departmental meetings) this was diffused across the system
- Individual provider utilization of the ADP was provided to site medical directors and the individual providers

In June of 2016 the ADP was updated with the HEART protocol

Objective

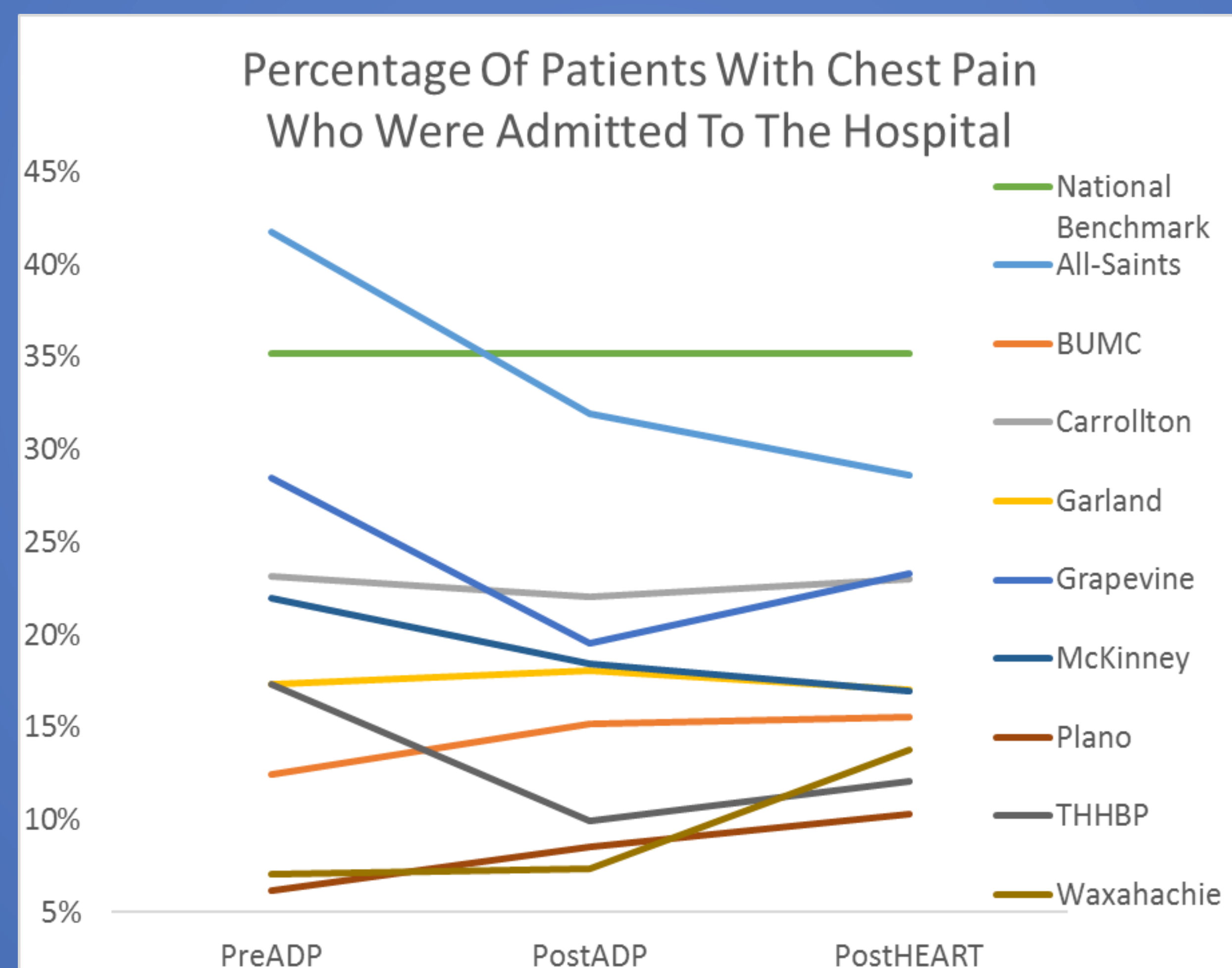
To evaluate the impact of the ADP and HEART protocol on hospital admission

Methods

All patients who presented to a BSW-NTX hospital between 01/2011 and 10/2016 with a diagnosis related to chest pain, heart attack, or unstable angina were included in the analysis

Admission rates for 3 periods were compared:

- 1) Pre ADP: 01/2011-10/2013 base line data
- 2) Post ADP: 11/2013-05/2016 NTX derived accelerated diagnostic protocol
- 3) Post HEART: 06/2016-10/2016



Patients Presenting to the ED with Chest Pain

Patient Group	Admission rate	Relative drop	P
Pre ADP (baseline)	17.7%	---	40
Post ADP	16.5 %	7%	0.15
Post HEART	16.1%	10%	<0.004

Results

Prior to ADP there was marked variation between hospitals. Chest pain admission rates ranged between 43-7%

The implementation of the ADP and HEART protocol were associated with:

- A drop in chest pain admissions to less than 1/2 the national average
- A marked decrease in variation in practice between site. Likely reflecting the adoption of standardized, evidence based practice

The drop in admissions represented a ~ 10% reduction compared to our own baseline

Annualized across the system this represents a reduction of 580 admissions

- This is a reduction in 2200 inpatient days³
- This is a cost savings of \$4.6 million per year³

Some sites saw an increase in admissions. This is likely due to evolution in evidence based practice and the availability of an CDU observation unit

Conclusion

Diffusion of an accelerated diagnostic protocol across 9 hospitals reduced admissions for chest pain by 10%

References

1. National Hospital Ambulatory Medical Care Survey: 2011 Emergency Department Summary Tables
2. Bhuyia et al, Emergency Department visits for chest pain or abdominal pain: United States 1999- 2008. NCHS Data brief No43, 2010
3. Groarke et al. Cost burden of non-specific chest pain admissions. Ir J Med Sci, 2013 182(1): 57-61