

Comparison of Demographics and Outcomes of NSTEMI/UA in the Pre- and Peri-COVID19 Pandemic

Michael Durr, Jay Shavadia, Udoka Okpalauwaekwe, Sabeena Khan, Haissam Haddad for the USask Cardiovascular research group, College of Medicine, Department of Medicine, University of Saskatchewan

BACKGROUND

The incidence of acute myocardial infarction (AMI) substantially declined with the emergence of the COVID-19 pandemic.

With pandemic progression, a temporal rebound and worse cardiovascular outcomes have since been noted.

This rebound effect has been shown for ST elevation myocardial elevation (STEMI) patients, but unclear for non-ST elevation myocardial infarction/ unstable angina (NSTEMI/UA)

We compare demographics & clinical outcomes of patients presenting with NSTEMI/UA in the pre- and peri-COVID timeframe.

METHODS

Single-center observational analysis at the Royal University Hospital in Saskatoon, Saskatchewan, Canada.

Patients admitted with a diagnosis of NSTEMI/UA between March 2019-2020 (pre-COVID) were compared with those admitted between March 2020-2021 (peri-COVID).

Continuous variables are presented as medians (25th, 75th percentiles) and compared using t-tests, categorical values as frequencies (%) and compared using chi-squared tests.

Variables of interest: demographics, risk profile, severity of presentation, extent of coronary disease, management approach, in-hospital events, post procedural outcomes.

RESULTS

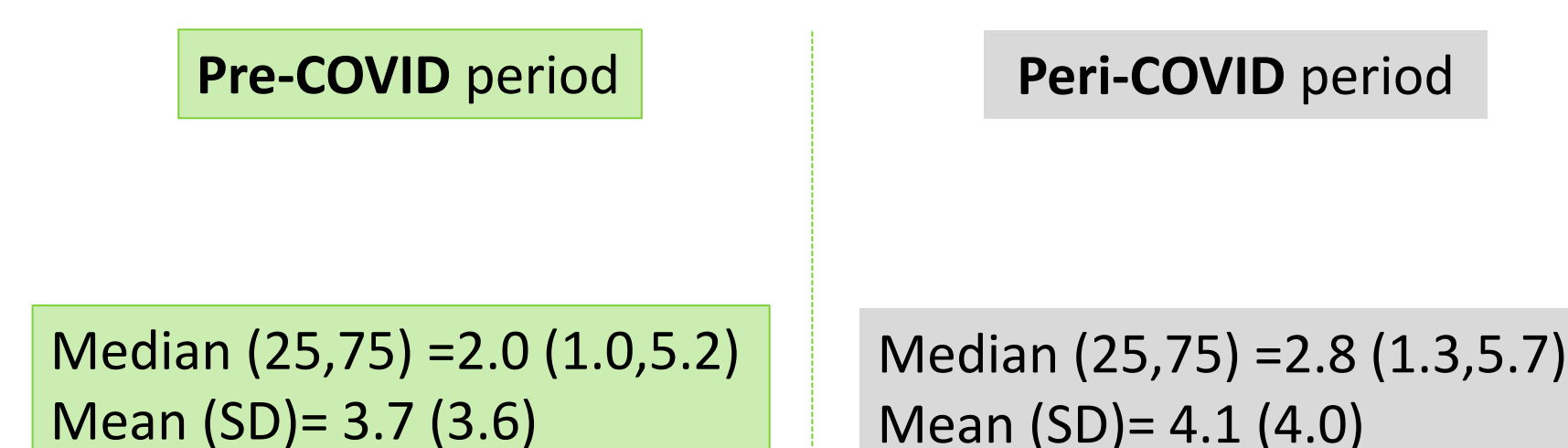
Baseline patient characteristics (N=1655)

Demo-graphics	Pre Covid19 n=777 (47.4%)	Peri Covid19 n=878 (52.6%)	p-value
Age (years)	67 (58,76)	66 (57, 75)	0.253
Male sex	66.4%	69.3%	0.146
Caucasian	80.5%	79.7%	0.605
Indigenous	12.7%	13.9%	0.388
NSTEMI	39.4%	36.9%	0.218
Unstable angina	25.2%	22.6%	0.147

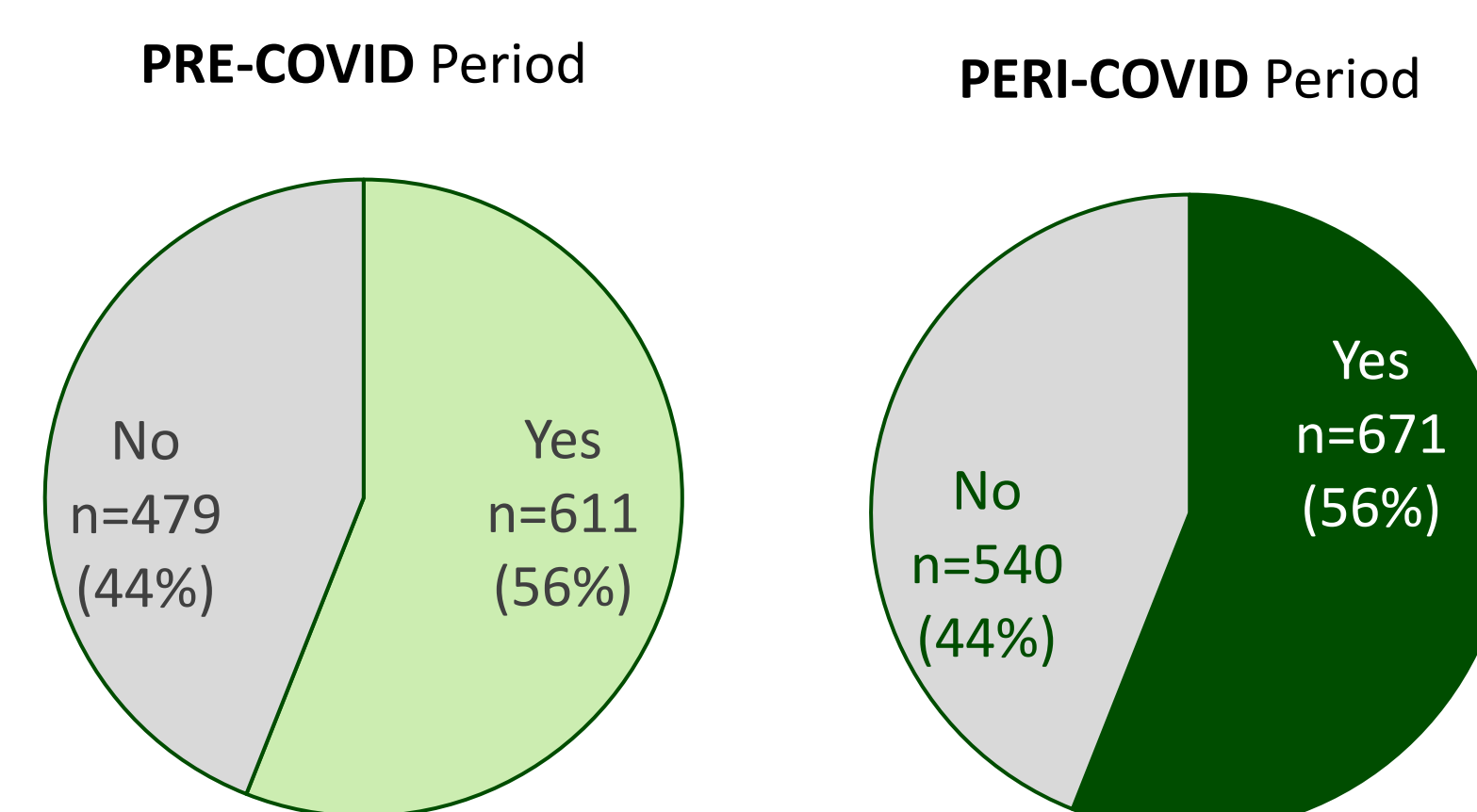
RESULTS

Risk Factors	Pre Covid	Peri Covid	p-value
Diabetes mellitus	31.0%	34.5%	0.071
Hypertension	65.9%	68.5%	0.197
Previous MI	29.6%	23.8%	0.002
Previous PCI	28.8%	23.4%	0.003
Smoker	31.7%	29.6%	0.263
Stroke	0.3%	0.4%	0.586
BMI	29.03 (25.84, 33.27)	29.06 (25.23, 33.32)	0.199

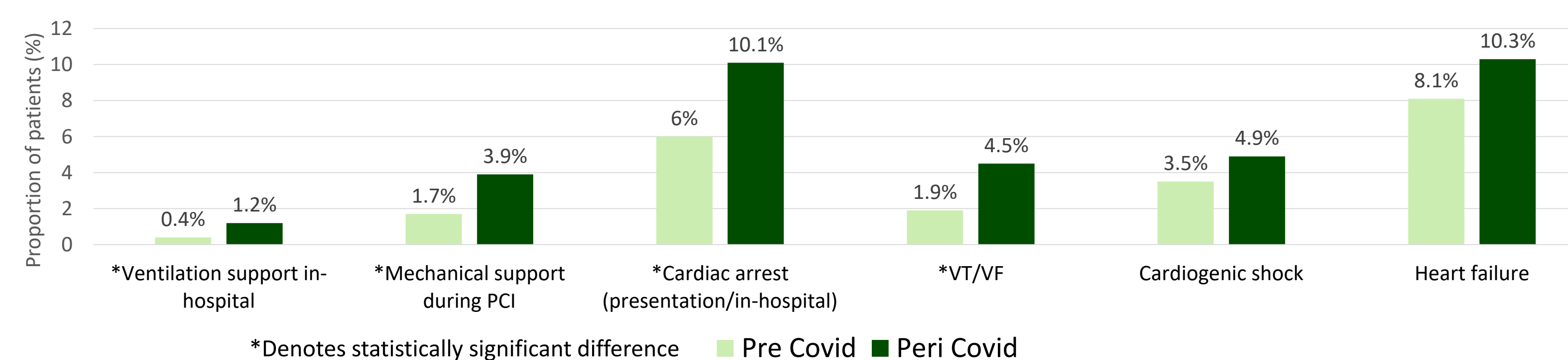
Symptom of onset to first medical contact time (hours)



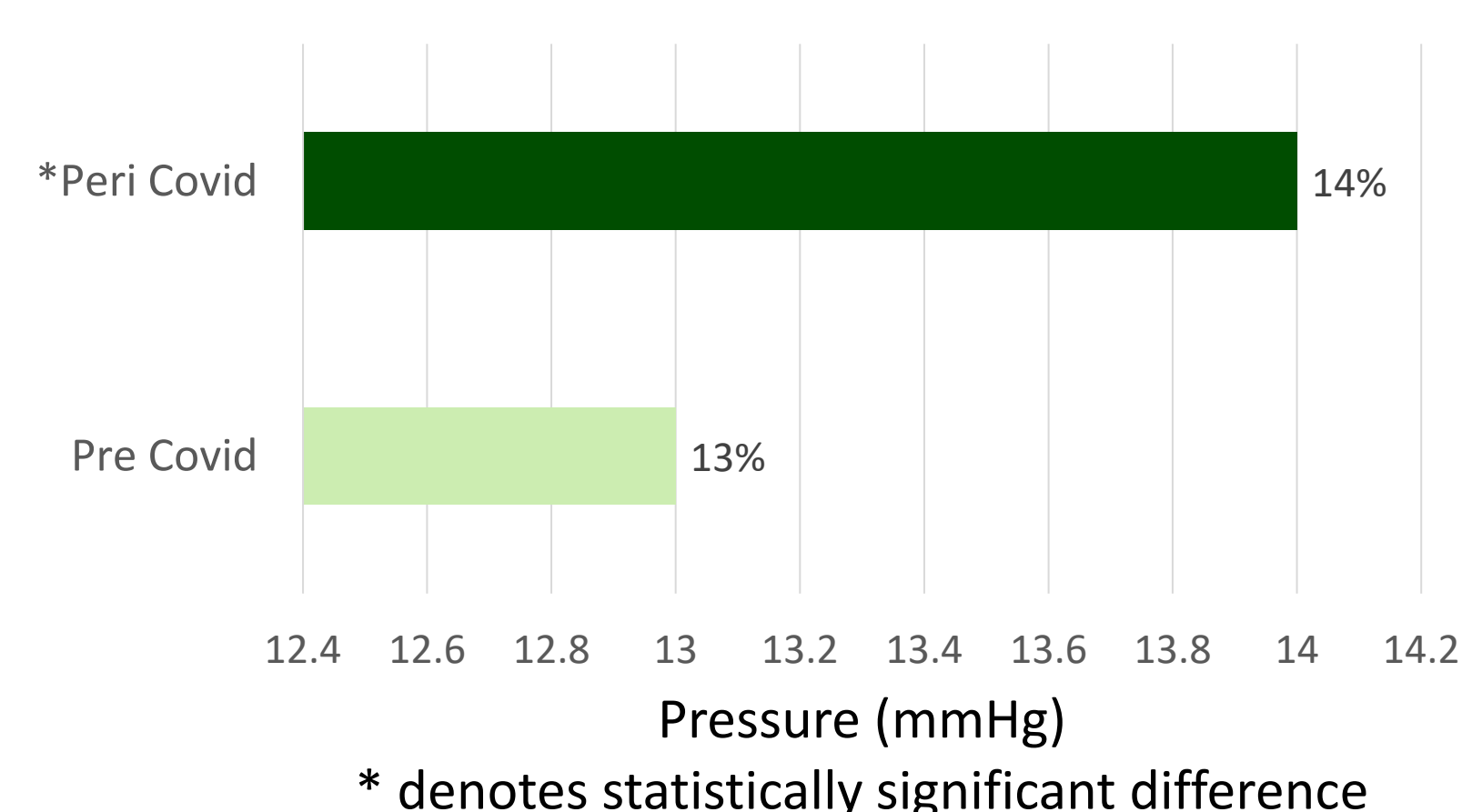
Incidence of Percutaneous Coronary Intervention for NSTEMI/UA



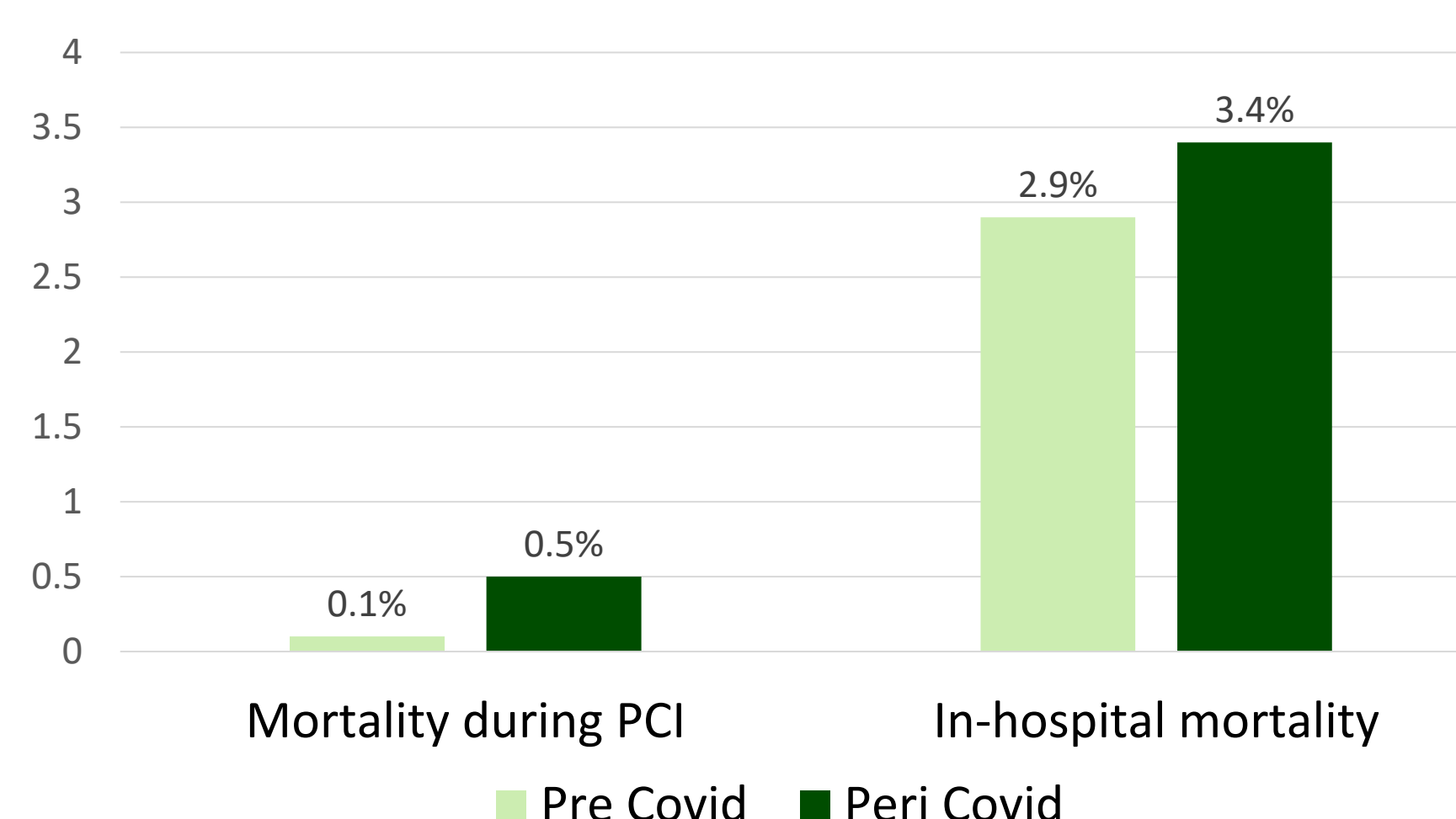
Proportion of NSTEMI/UA Patients with Post Procedural Events in Pre-COVID vs Peri-COVID



Left Ventricle End-Diastolic Pressures (LVEDP) of NSTEMI/UA Patients in Pre-COVID vs Peri-COVID Period



Proportion of NSTEMI/UA Patients with Mortality in Pre-COVID vs Peri-COVID



EARLY CONCLUSIONS

- In Northern Saskatchewan, the burden of traditional cardiovascular risk in the pre-COVID compared with peri-COVID period appears largely comparable.
- No significant difference in prevalence of NSTEMI or UA suggesting the absence of a rebound surge in NSTEMI/UA presentations
- Peri-COVID timeframe is associated with sicker presentations and a trend towards adverse in-hospital outcomes

FUTURE DIRECTIONS

The USASK cardiovascular group, using the Northern Saskatchewan ACS database, will further evaluate the change in:

1. Angiographic severity of NSTEMI/UA
2. Extent of coronary disease (number of vessels)
3. Clinical severity (Killip class) of heart failure of NSTEMI/UA

SYSTEMIC AND PATIENT-LEVEL INTERVENTION

Both patient-related factors such as delayed and atypical presentations, and system-related processes such as ability to deliver timely intervention may associate with the observed outcomes.

Patient level interventions should focus on patient education to improve their index of suspicion to seek care sooner, as well as promotion of healthy lifestyle behaviours.

System level interventions aim to risk stratify NSTEMI/UA presentations at greater risk for mortality aimed at appropriate triage given the atypical presentations and constrained resources

ACKNOWLEDGEMENTS

This study was funded through grants from the Royal University Hospital Foundation (RUHF) and the College of Medicine, Department of Medicine, University of Saskatchewan