

THE PROCESS OF OPTIMIZING CARDIAC PRE-PRINTED ORDERS IN NORTHERN HEALTH (NH)

PROJECT AIM

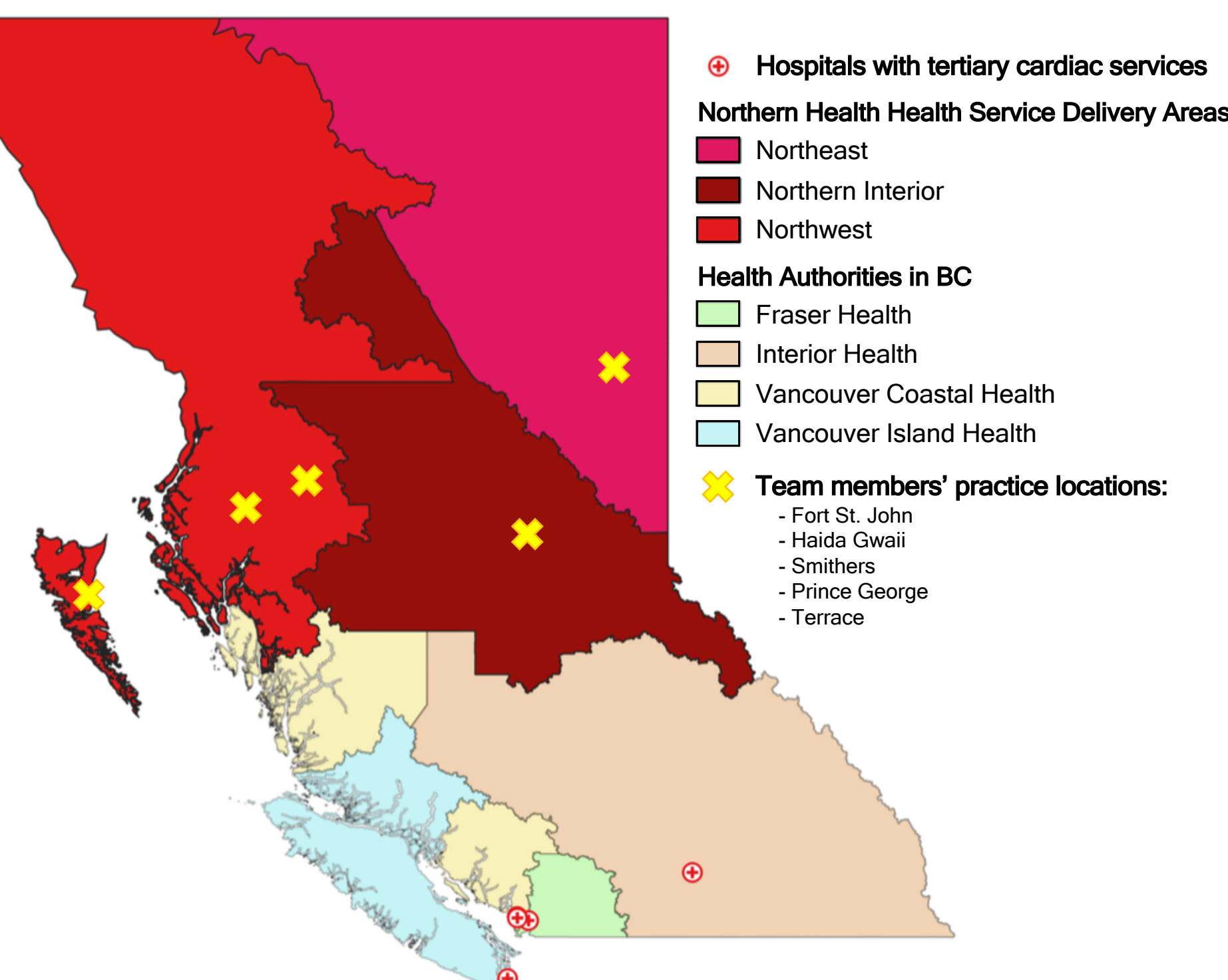
To revise and create a standardized, pre-printed order set for the initial management of suspected ischemic chest pain by December 2019 based on the feedback collected from acute care sites within the Northern Health Authority and the interdisciplinary team of the NH Cardiac Services Working Group.

Location: Mills Memorial Hospital – Emergency Room
Contact: Tony Chae, BScN – UBC Medical Student Year 3
Date: December 2019 (pending final approval)

BACKGROUND

Despite Northern Health (NH) serving the largest geographical region in British Columbia, NH faces unique challenges in providing care for patients who require tertiary cardiac services as these services are only available in other health regions.

Thus, as part of the NH Cardiac Strategy, the NH Cardiac Services Working Group was created with the aims to revise existing cardiac order sets based on current evidence, to educate health care professionals (HCPs) on effectively utilizing these revised order sets, and to improve the quality of cardiac care in NH.



TEAM MEMBERS

The NH Cardiac Services Working Group included the following **representatives from the 3 health service delivery areas of NH** to ensure adequate representation and engagement across the region:

- Lead, Cardiac Care and Stroke Care
- Clinical Nurse Specialist, Cardiac Services BC
- Executive Lead for ER, Trauma, and Patient Transfer
- Medical Lead, Cardiac Services
- Physicians (internal medicine, emergency, family)
- Nurses (ER, clinical nurse educators)
- Hospital pharmacist
- First Nations Health Authority

***The team members' practice locations have been identified on the map above*

PROBLEM STATEMENT

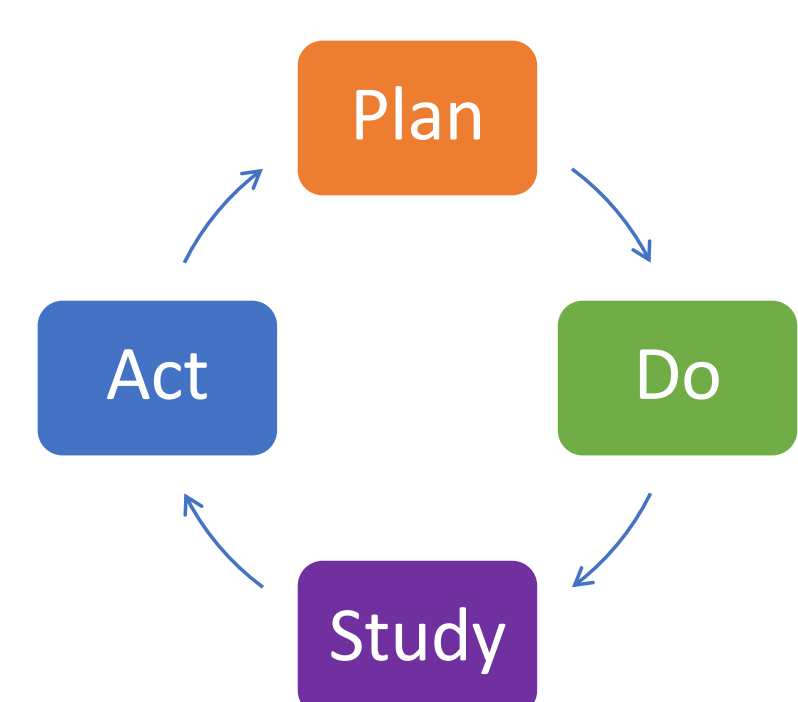
Due to the diverse geographic areas within NH including cities, towns, and remote communities, developing a regional order set that is applicable to these various areas poses unique challenges including, but not limited to:

- Navigating how to provide quality cardiac care in settings with limited access to resources (ie. the distance to tertiary cardiac services are such that primary percutaneous coronary intervention is not a readily available option).
- Providing person-centred care to diverse populations.
- Striving for documents that are comprehensible to HCPs with varying levels of knowledge/experience.
- Facilitating engagement of HCPs within different workplace cultures.

This project hopes to address the following aspects of the **BC Health Matrix**:

- Increase the **efficiency** in initiating initial investigations and management for patients coming into the emergency department with suspected ischemic chest pain.
- Increase the **safety** by standardizing order sets that will help guide HCPs in providing comprehensive, quality care to cardiac patients.

CHANGE IDEA



Using PDSA Cycles:

- Develop an interdisciplinary working group involving providers from various practice areas.
- Review current evidence on the management of cardiac ischemia.
- Build from the existing "Initial Chest Pain Management" order set to develop NSTEMI/Unstable Angina and STEMI order sets.

Steps in this project:

- Create a draft "Initial Management of Suspected Ischemic Chest Pain" order set by comparing existing order sets and obtaining feedback from working group members.
- Pilot the draft at Mills Memorial Hospital in Terrace, BC.
- Collect written and verbal feedback from staff.
- Integrate feedback to modify and optimize the order set.

RESULTS

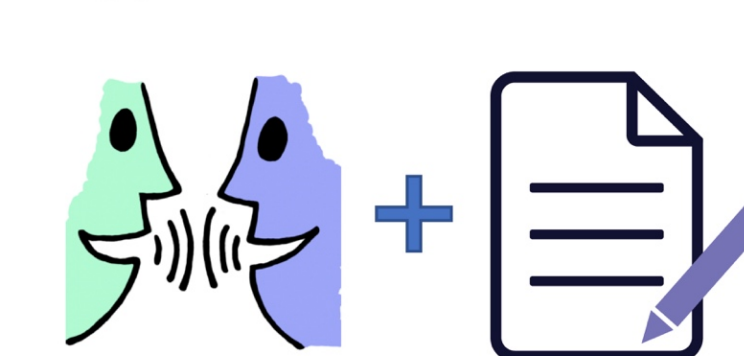
SUMMARY OF FEEDBACK

Location: Mills Memorial Hospital – ER

Duration: August 2019



Type of Feedback:



Respondents Included:

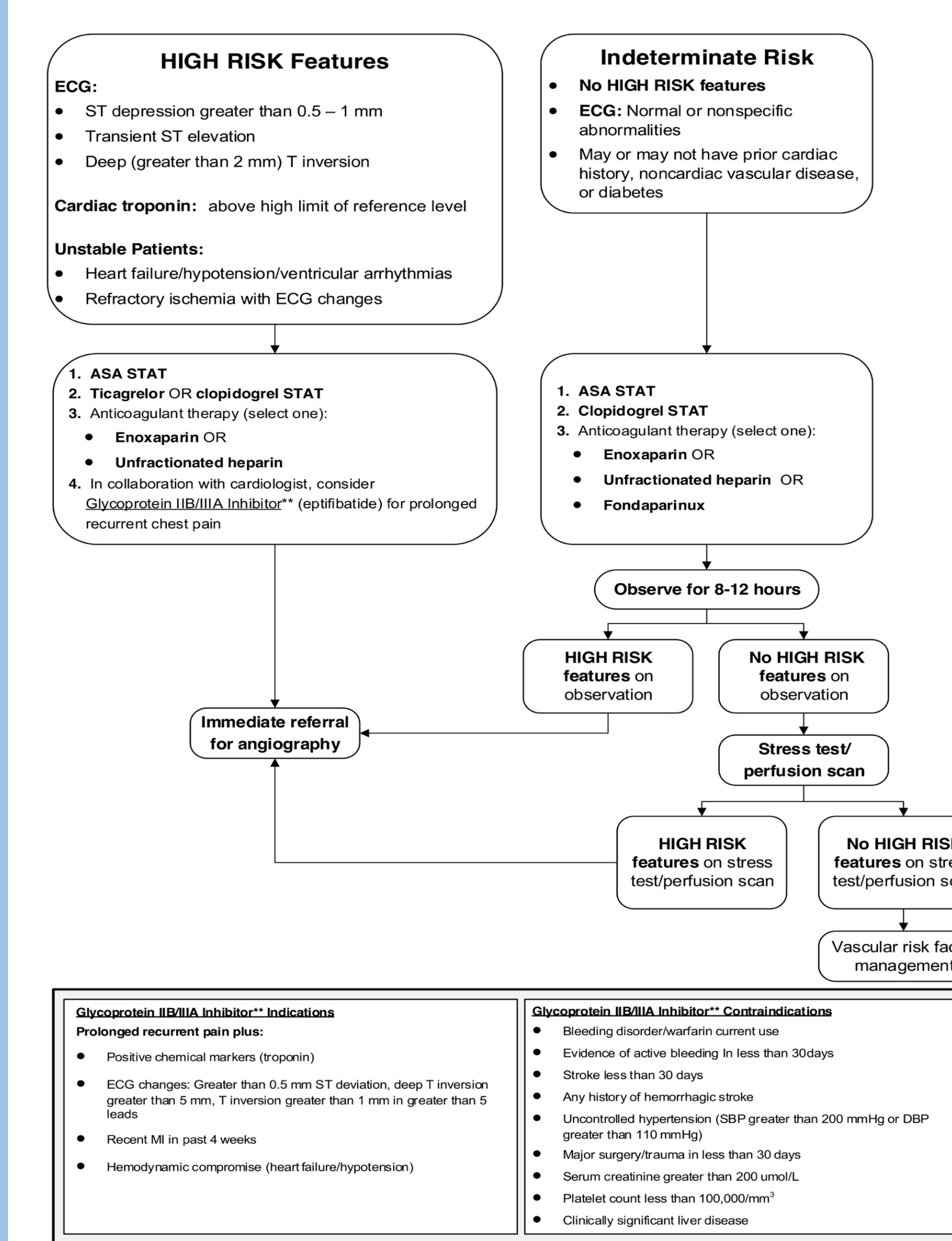
- Registered Nurses
- Physicians
- Resident Physicians
- Medical Students

Total = 19

Summary of Feedback:

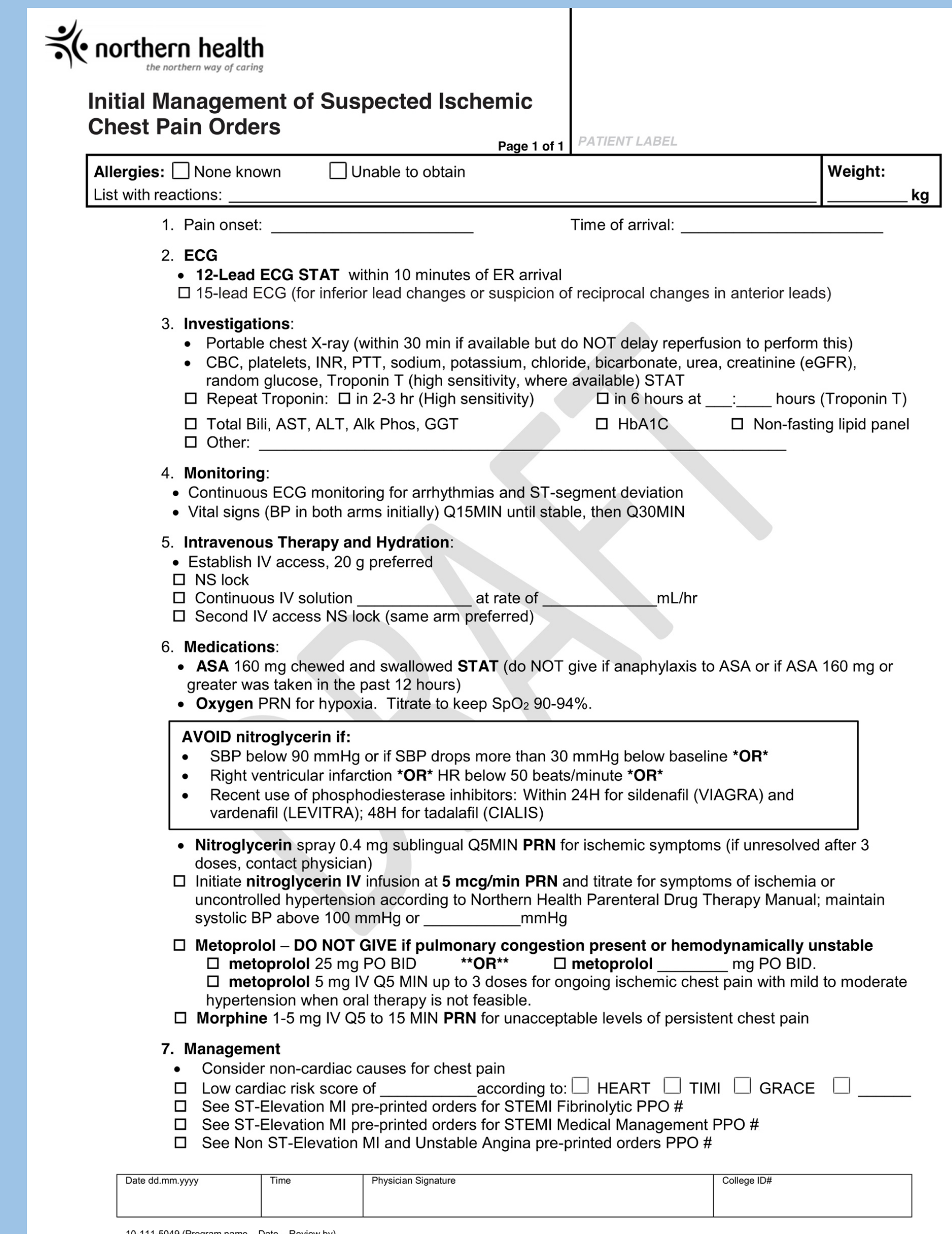
- Clarification of orders (ie. oxygen therapy, medication dosage)
- Recommendation to remove unnecessary investigations
- Spelling corrections
- Formatting

RISK STRATIFICATION ALGORITHM OF NSTEMI/UA



*** This algorithm was adapted and developed with consideration of local resources after the creation of the "Initial Management of Suspected Ischemic Chest Pain Orders". This algorithm will be incorporated into the NSTEMI/UA and STEMI order sets that is currently in progress.*

PRE-PRINTED ORDER SET



northern health
the northern way of caring

Initial Management of Suspected Ischemic Chest Pain Orders

Page 1 of 1 PATIENT LABEL

Allergies: ☐ None known ☐ Unable to obtain **Weight:** _____ kg

List with reactions:

- Pain onset: _____ Time of arrival: _____
- ECG
 - 12-Lead ECG STAT within 10 minutes of ER arrival
 - 15-lead ECG (for inferior lead changes or suspicion of reciprocal changes in anterior leads)
- Investigations:
 - Portable chest X-ray (within 30 min if available but do NOT delay reperfusion to perform this)
 - CBC, platelets, INR, PTT, sodium, potassium, chloride, bicarbonate, urea, creatinine (eGFR), random glucose, Troponin T (high sensitivity, where available) STAT
 - Repeat Troponin: ☐ in 2-3 hr (high sensitivity) ☐ in 6 hours at _____ hours (Troponin T)
 - Total Bilirubin, AST, ALT, Alk Phos, GGT ☐ HbA1C ☐ Non-fasting lipid panel
 - Other: _____
- Monitoring:
 - Continuous ECG monitoring for arrhythmias and ST-segment deviation
 - Vital signs (BP in both arms initially) Q15MIN until stable, then Q30MIN
- Intravenous Therapy and Hydration:
 - Establish IV access, 20 g preferred
 - NS lock
 - Continuous IV solution _____ at rate of _____ mL/hr
 - Second IV access NS lock (same arm preferred)
- Medications:
 - ASA 160 mg chewed and swallowed STAT (do NOT give if anaphylaxis to ASA or if ASA 160 mg or greater was taken in the past 12 hours)
 - Oxygen PRN for hypoxia. Titrate to keep SpO₂ 90-94%.

AVOID nitroglycerin if:

- SBP below 90 mmHg or if SBP drops more than 30 mmHg below baseline *OR*
- Right ventricular infarction *OR* HR below 50 beats/minute *OR*
- Recent use of phosphodiesterase inhibitors: Within 24H for sildenafil (VIAGRA) and vardenafil (LEVITRA); 48H for tadalafil (CIALIS)

Nitroglycerin spray 0.4 mg sublingual Q5MIN PRN for ischemic symptoms (if unresolved after 3 doses, contact physician)

☐ Initiate nitroglycerin IV infusion at 5 mcg/min PRN and titrate for symptoms of ischemia or uncontrolled hypertension according to Northern Health Parenteral Drug Therapy Manual; maintain systolic BP above 100 mmHg or _____ mmHg

☐ Metoprolol – DO NOT GIVE if pulmonary congestion present or hemodynamically unstable

- metoprolol 25 mg PO BID **OR** metoprolol _____ mg PO BID
- metoprolol 5 mg IV Q5 MIN up to 3 doses for ongoing ischemic chest pain with mild to moderate hypertension when oral therapy is not feasible.
- Morphine 1-5 mg IV Q5 to 15 MIN PRN for unacceptable levels of persistent chest pain

7. Management

- Consider non-cardiac causes for chest pain
- Low cardiac risk score of _____ according to: ☐ HEART ☐ TIMI ☐ GRACE ☐ _____
- See ST-Elevation MI pre-printed orders for STEMI Fibrinolytic PPO #
- See ST-Elevation MI pre-printed orders for STEMI Medical Management PPO #
- See Non ST-Elevation MI and Unstable Angina pre-printed orders PPO #

Date: 05/01/2019 Time: _____ Physician Signature: _____ College ID#: _____

10-111-5448 (Program name – Date – Review by)

NEXT STEPS

With the successful revision and approval of this order set, **plans are in motion to:**

- Apply a similar process to the NSTEMI/Unstable Angina and STEMI pre-printed order sets.
- Consider future plans to evaluate if these updated order sets contribute to an increase in patients receiving evidence-based cardiac care.

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- NH Cardiac Services Working Group
- Mills Memorial Hospital ER Staff
- Dr. Denise Jaworsky
- Lee Cameron

CONTACT INFORMATION

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