

Operation 'Flow'

It all starts on admission!



Atrial Fibrillation & Stroke

- Atrial Fibrillation (A-Fib)
 - A Primary Cause of Strokes
 - Frequently Causes Acute Transfers
 - Is Often Asymptomatic, or Not Obvious with Seniors
- Strokes
 - Potentially Fatal
 - Often Cause Significant Morbidity and Increase in Care Complexity
 - Can be Avoided by Treating A-Fib Appropriately



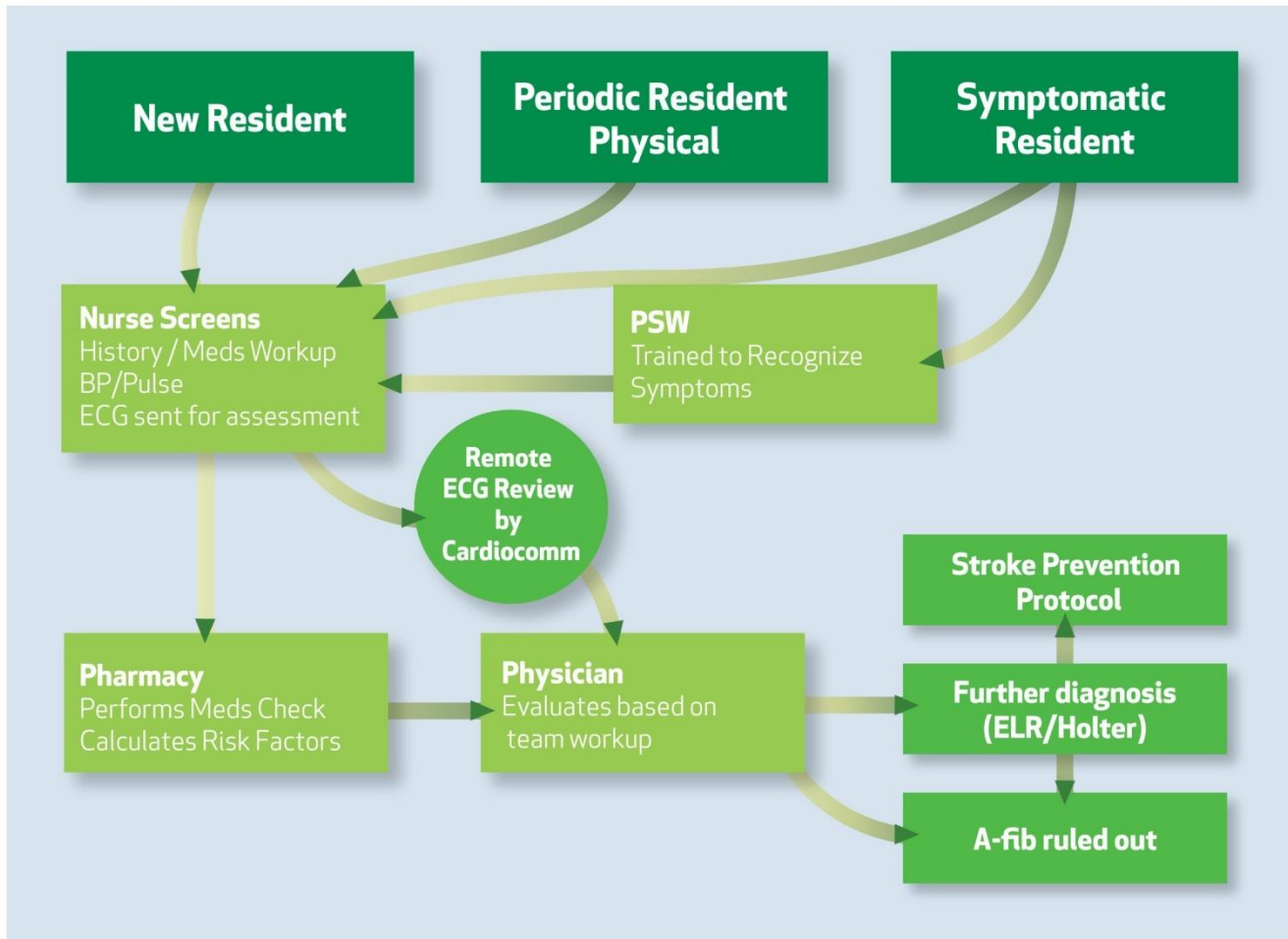
Respond & Flow

Objectives

- Form a multidisciplinary Atrial Fibrillation Team (AFAT) that will develop and implement an organized protocol for:
 - Ongoing testing for fibrillation for all residents
 - Training staff with resident contact to recognize and respond appropriately to signs of atrial fibrillation
 - Reducing transfers to ER and prevent strokes in our homes
 - Comprehensive, Multidisciplinary and Best Practice approach to screening and treating atrial fibrillation



Screening Process



Knowledge Transfer

Staff Type	Knowledge Transfer Objectives	Delivery
PSW	<ul style="list-style-type: none"> • General A-Fib Awareness • Early Warning Signs • What to do 	<ul style="list-style-type: none"> • Group Training Sessions
Registered Staff	<ul style="list-style-type: none"> • General A-Fib Awareness • Early Warning Signs • ECG Testing • When to Test • Information to Gather 	<ul style="list-style-type: none"> • Group Training Sessions • Protocol / Order Set
Pharmacist	<ul style="list-style-type: none"> • Meds Review • Diagnostics Review • Stroke Risk • Bleed Risk 	<ul style="list-style-type: none"> • Protocol / Order Set
Physician	<ul style="list-style-type: none"> • Process 	<ul style="list-style-type: none"> • Order Set • One-on-One Sessions



- Comprehensive training for staff is critical for the success of the project
- Training where knowledge is needed, structure where knowledge is present



Nursing Admission

Nursing Admission Focuses on:

- Resident Background
- Key A-Fib vitals
 - ECG
 - BP & Pulse
 - A-Fib Meds Status
 - INR History



Nursing Admission Order Set (pg 1)

Admission Assessment for AF Screening (completed by AFAT Team Lead)

History of Cardiac Arrhythmia?

- YES NO IF YES, DOES RESIDENT HAVE A PACEMAKER?

Type of Arrhythmia, if known:

- Atrial Fibrillation or Flutter
 Ventricular or atrial premature beats
 Ventricular or supraventricular tachycardia
 Bradycardia or sinus arrhythmia
 Conduction abnormalities (eg AV block, right or left bundle block)
 QT prolongation

Cardiovascular History

- High Blood Pressure
 High Cholesterol
 Previous Heart Attack or Coronary Artery Disease
 Details: _____
 Previous Stroke/TIA/Cerebrovascular disease/Peripheral Vascular Disease
 Details: _____
 Rheumatic Valvular Heart Disease (eg Mitral Stenosis) or Prosthetic Heart Valves

Other Risk Factors (bleeding or stroke)

- Diabetes
 Kidney Disease/Abnormal Kidney Function
 Liver Disease/Abnormal Liver Function
 (Current) Drug Use
 (Current) Alcohol Use
 History of bleeding
 Details: _____
 Sleep Apnea



Nursing Intervention

Nursing Intervention Focuses on:

- Appropriate Response to Displayed Symptoms including:
 - Contacting Physician / EMF
 - Diagnostic data
 - Medications delivery

Nursing Intervention Order Set (pg 1)

Nursing Order Set for Performing Rhythm Strip Based on Resident Symptoms		
Symptom	Action	Rationale
<input type="checkbox"/> Chest discomfort, pain or pressure <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Syncopal	<p>If either or both of these symptoms occurs alone or along with any of the symptoms below:</p> <ul style="list-style-type: none"> • Take blood pressure and pulse • Administer previously implemented/ordered medications, if any • Notify the physician or activate EMF 	<p>This may indicate a medical emergency requiring appropriate medical intervention for the resident's plan of care</p>
<input type="checkbox"/> Low Blood Pressure (Drop below 100 systolic AND 25% lower than usual)	<ul style="list-style-type: none"> • Move resident to horizontal position • At bedside monitoring with vital signs every 15 minutes until situation deemed stable by Physician / Nurse Practitioner • Notify Physician • Clinically examine for apparent cause (eg: GI Bleed) 	<p>This may indicate a medical emergency requiring appropriate medical intervention for the resident's plan of care</p>
<input type="checkbox"/> Light-headed/Pre-syncopal	<ul style="list-style-type: none"> • Take Blood Pressure & Pulse • Notify Nursing Supervisor (if Appropriate) • Perform Rhythm Strip • Notify Physician if Blood Pressure Abnormal and Rhythm Strip has been taken • If resident becomes unstable address as per 	<p>To rule out rhythm or rate disturbance as a cause of symptoms</p> <p>These symptoms may be due to hypoperfusion to the brain</p>



Onsite ECG

- The HeartCheck™ Handheld ECG Monitor for Preliminary Atrial Fibrillation Screening
- This handheld ECG Monitor is available on every nursing cart and is a key component in early screening
- Our nursing staff is trained to take ECGs and upload them for review by the ECG techs and cardiologists at Cardiocomm



Pharmacy Assessment

The role of the pharmacist

- Optimize drug therapy
- Work with other members of the team to improve resident outcomes
 - i.e. minimize risk for adverse events; drug-drug interactions, omissions
- On admission/re-admission/checkup:
 - Pharmacist completes their therapeutic assessment tool
 - Will calculate CHADS2 and HAS-BLED score
 - Will assess current stroke prevention therapy
 - Provide recommendations to MD



Pharmacy Order Set (pg 1)

Pharmacist Therapeutic Assessment Tool for Preventing Stroke in Residents Living with AF

1. Calculate CHADS2 Score (using Nursing Assessment Results):

RISK FACTOR	SCORE
<input type="checkbox"/> Congestive Heart Failure	1
<input type="checkbox"/> Hypertension (≥140/90 or treated)	1
<input type="checkbox"/> Age ≥75	1
<input type="checkbox"/> Diabetes Mellitus	1
<input type="checkbox"/> Previous Stroke / TIA / Thromboembolism	2
Total Score:	_____

Corresponding Stroke Risk: _____

CHADS ₂ Score	Adjusted stroke rate, %/yr (95% CI)
0	1.9 (1.2-3.0)
1	2.8 (2.0-3.8)
2	4.0 (3.1-5.1)
3	5.9 (4.6-7.3)
4	8.5 (6.3-11.1)
5	12.5 (8.2-17.5)
6	18.2 (10.5-27.4)

2. Calculate HAS-BLED Score (using Nursing Assessment Results): _____

CLINICAL CHARACTERISTIC	SCORE
<input type="checkbox"/> Hypertension	1
<input type="checkbox"/> Abnormal Renal or Liver Function (1 pt each)	1 or 2
<input type="checkbox"/> Stroke	1
<input type="checkbox"/> Bleeding	1
<input type="checkbox"/> Labile INRs	1
<input type="checkbox"/> Elderly (age ≥65)	1
<input type="checkbox"/> Drugs or Alcohol (1 pt each)	1 or 2
Total Score:	_____

Corresponding Bleeding Risk: _____

RISK SCORE	MAJOR BLEEDS (%/YR)
0	1.13
1	1.02
2	1.88
3	3.74
4	8.70
5	12.50

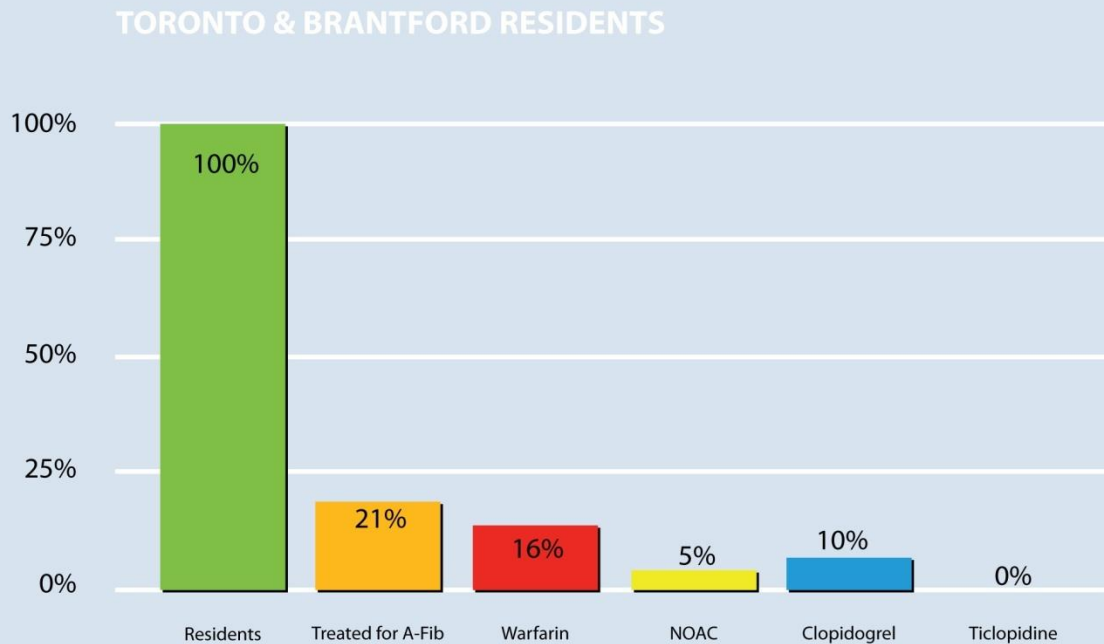
3. Calculate Creatinine Clearance _____

4. Assess current stroke prevention therapy:

Current therapy for stroke prevention: _____



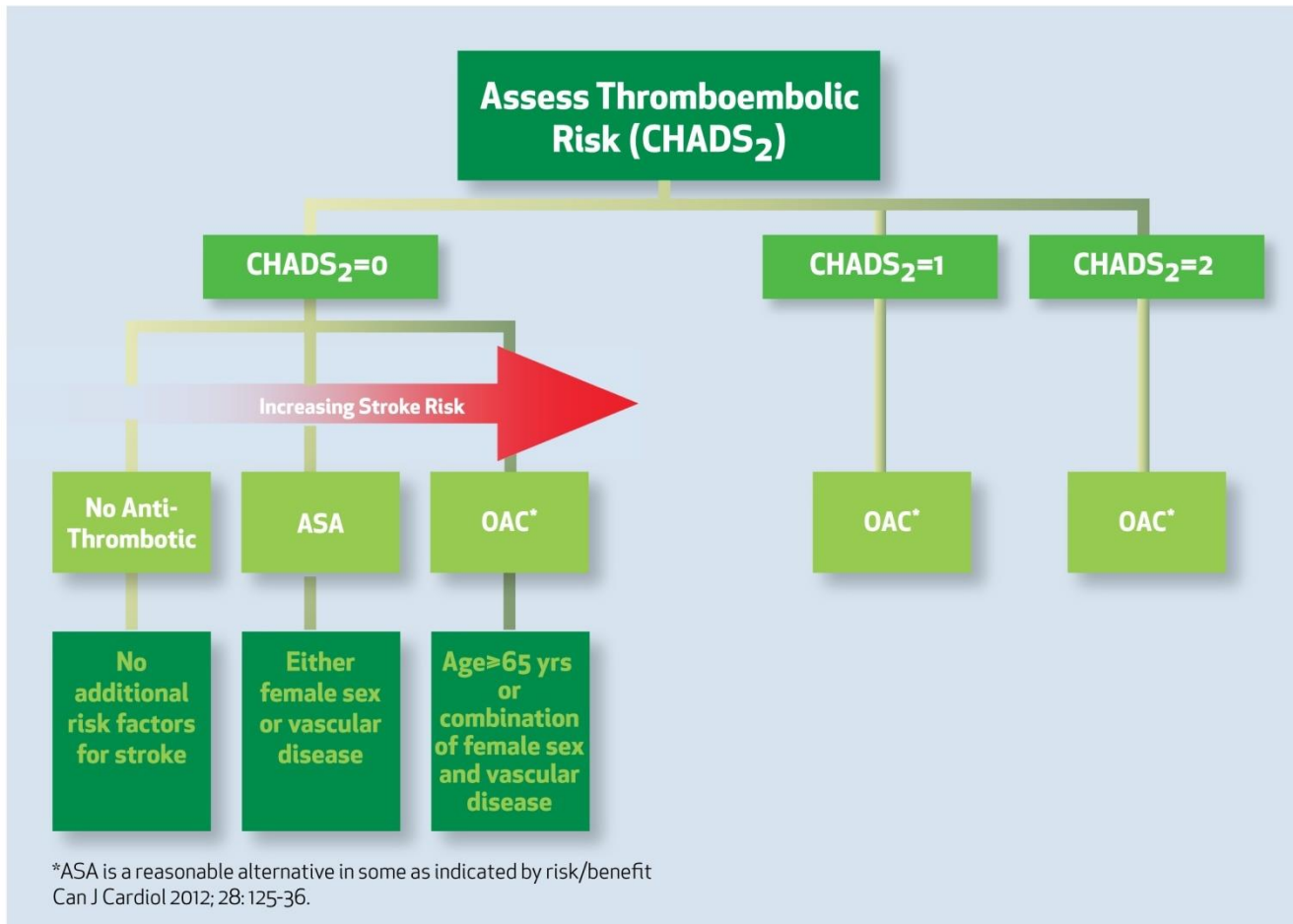
Baseline data



- 21% of residents treated with an A-fib anticoagulant therapy
- A significant presence of clopidogrel/ticlopidine
- 77% of residents treated take warfarin



CCS Atrial Fibrillation Guidelines 2012



HAS-BLED Bleeding Risk Score

Letter	Clinical Characteristic	Points Awarded
H	Hypertension	1
A	Abnormal renal & Liver Function	1 or 2
S	Stroke	1
B	Bleeding	1
L	Libile INRs	1
E	Elderly (age > 65 years)	1
D	Drugs or Alcohol (1 point each)	1 or 2

Maximum of 9 Points



A = dialysis, transplantation, Cr \geq 200 mmol/L; cirrhosis, bilirubin $>$ 2 x ULN] in association with aspartate aminotransferase/alanine aminotransferase/alkaline phosphatase $>$ 3 x ULN, etc.);

B = bleeding history and/or predisposition to bleeding (e.g. bleeding diathesis, anemia, etc.);

L = unstable/high INRs or poor time in therapeutic range (e.g. $<$ 60%);

D = concomitant use of drugs, such as antiplatelet agents, non-steroidal anti-inflammatory drugs, or alcohol abuse



Physician Assessment

Physician Assessment Focuses on:

- Evaluating the data provided by the rest of the team
- Evidence-based, best practice response to the evaluation
- Establishing ongoing care to be delivered by themselves and the team



Physician Order Set (pg 1)

LTC Physicians Order Set
For Arrhythmia Monitoring

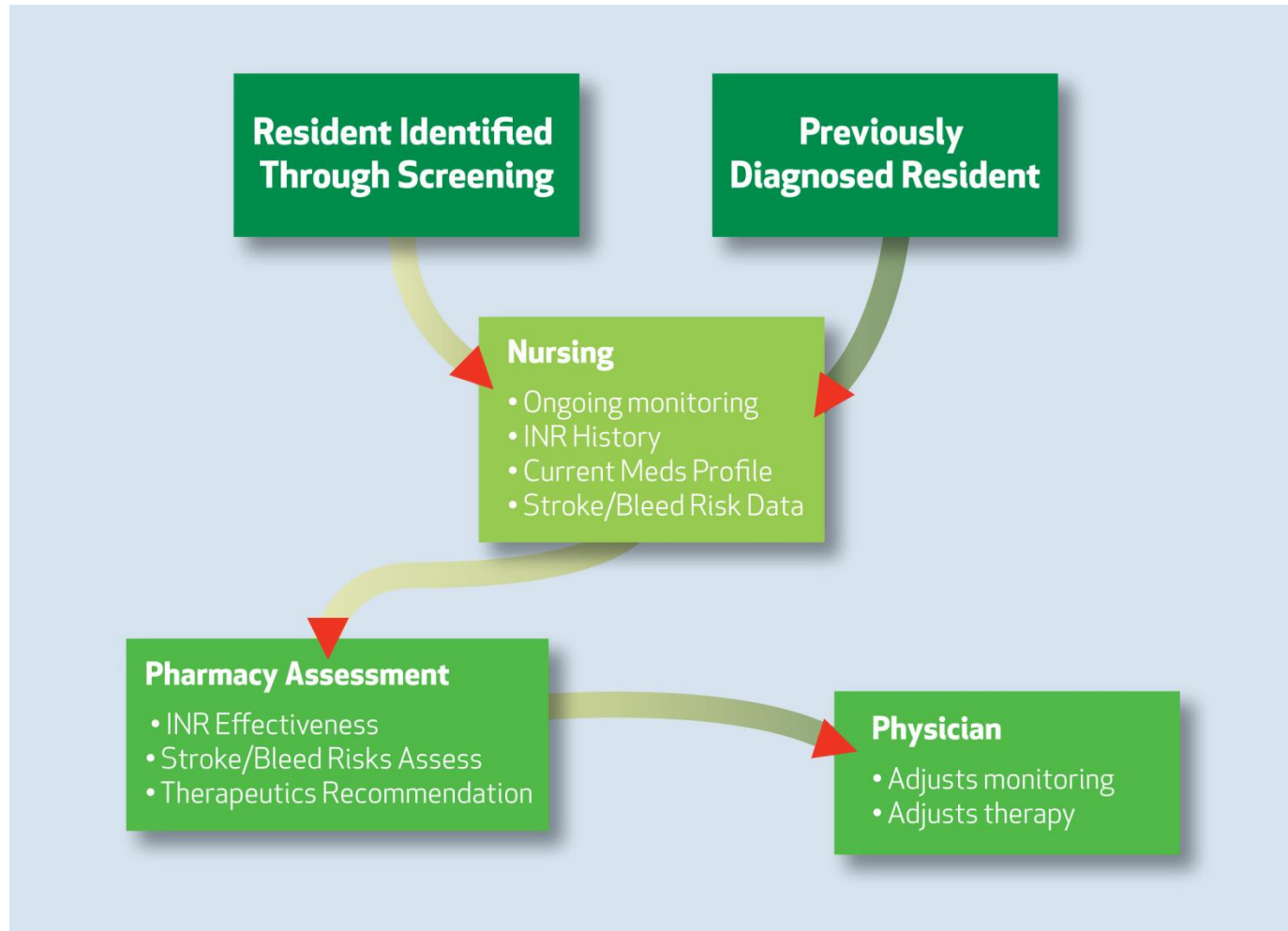
PURPOSE: Residents of long-term care facilities are at risk for developing arrhythmias on the basis of their age or comorbid conditions or both. Furthermore, arrhythmias often go undetected and are frequently asymptomatic in the elderly. This document when completed by the resident's provider, will help the long-term care facility in the early detection and care of the resident. These orders incorporate best practice guidelines where appropriate.

- PRE-existing DIAGNOSIS:
 - Atrial Fibrillation
 - Conduction Abnormality
 - Other Arrhythmia (please list) _____
- Screening for Arrhythmia:

WHAT ARE THE GOALS FOR SCREENING?			
Arrhythmia Detection Goals Individualize goal based on patients risk factors Three distinct opportunities will be described: baseline, with symptoms, repeat screening			
Baseline	To have the comparison and to identify any baseline abnormalities	Perform rhythm strip ECG. No further action unless abnormally detected.	
With Symptoms	To complement clinical assessment	Perform with symptoms. Further action may be required.	
Repeat Screening	Based on existing risk factors	No further action unless abnormally detected.	
RESPONSE TO ABNORMAL ECG		NOTES:	
Note: It is recommended that the rhythm strip is always performed with Blood Pressure Measurement		The following will be assessed and noted if not Normal/Within Normal Limits: 1. Atrial Fibrillation or flutter 2. Ventricular or atrial premature beats or ventricular or supraventricular tachycardia 3. Bradycardia a. Sinus arrest b. AV block (first or second degree or complete) 4. Pacemaker problems 5. Conduction abnormalities e.g. RBBB or LBBB 6. QT prolongation	
Definitions			
Normal or Within Normal Limits	Rate and Rhythm	Conduction	Other
Single Lead ECG Findings and Diagnosis:			
•No Evidence of Atrial Fibrillation	Rate: 60 - 100 bpm	QTc: < 440 msec	No other ECG abnormalities
•Possible Atrial Fibrillation	Irregularly Irregular	QTc: 440 - 460 msec	
ACTION/TREATMENT			
No Evidence of Atrial Fibrillation		Monthly:	
Perform ECG Test according to the schedule below		<ul style="list-style-type: none"> - Minimum standard of care - On stable dose of anti-arrhythmics, beta-blockers or calcium antagonists - Other medication changes (need to define and attach list of meds of interest) - Non-AF (stable) arrhythmia 	
•Monthly			
•Prompted by Symptoms			
POSSIBLE ATRIAL FIBRILLATION			
• ECG/Holter Monitor confirmation			
Prescribed Test Duration: _____ Hours			



Stroke Prevention Protocol



Summary

- We have:
 - An approach and a plan
 - The equipment
 - The knowledge
 - The right team and everyone is involved
- We will:
 - Screen all of our current residents routinely
 - Screen all new residents
 - Recognize symptoms of a-fib and test appropriately
 - Treat our residents with the appropriate medications
 - Dramatically reduce unnecessary acute transfers
 - Dramatically reduce strokes
 - Measure and demonstrate positive outcomes
- We Are Just Getting Started





CANADIAN
HEART
RESEARCH
CENTRE

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