

Point of Care INR: Successful Outcomes from an RPN Lead Clinic

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Disclosures

Presenters perceive no conflict of interest with this presentation.

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Objectives

- ✓ Introduce Stonechurch Family Health Centre
- ✓ Discuss lab vs point of care management
- ✓ Provide an overview of our INR program
- ✓ Highlight our INR management medical directive
- ✓ Present our outcomes
- ✓ Discuss INR clinic resources/costs



An Introduction to SFHC ...



STONECHURCH
FAMILY HEALTH CENTRE

 Hamilton Health Sciences

McMaster
University
HEALTH SCIENCES



Department of
Family Medicine
McMaster
Family Health Team

An Introduction to SFHC

- ✓ Provide primary care for approximately 15,000 patients in Hamilton and surrounding area.
- ✓ Clinical teaching unit affiliated with McMaster University and Hamilton Health Sciences
- ✓ Three teams of family doctors, nurses, allied health professionals and support staff
- ✓ Academic and community physicians
- ✓ Teaching and research



An Introduction to our INR Team...

- ✓ Core Team Members:
- ✓ 3 RPNs
- ✓ 1 NP
- ✓ Expanded group of RPNs, NPs and pharmacists trained for clinic coverage and INR management
- ✓ Initial intake appointment with pharmacist



Clinic Model

- ✓ Eligible patients registered with the INR clinic
- ✓ Initial intake appointment with pharmacist
- ✓ Wednesday mornings 9-11 AM
- ✓ Drop in model vs booked appointments
- ✓ Patients take a number on check-in
- ✓ 3 RPNs provide point of care (POC) management
- ✓ RPNs utilize medical directive



Clinic Model

- ✓ NP/pharmacist available for consultation
- ✓ Standardized documentation in EMR
- ✓ Clinic requires 4 Rooms: 3 for RPNs, one for monitor
- ✓ Equipment maintenance and supplies
- ✓ RPN: Patient centred model
 - ✓ INR Appointments outside clinic hours
 - ✓ Follow-up with no show patients
 - ✓ Manage patients utilizing lab for INR



INR: Laboratory Testing

- ✓ Frequent monitoring
- ✓ Outpatient laboratory
- ✓ Inconvenient
- ✓ Time consuming
- ✓ More invasive procedure
- ✓ Time delay for result
- ✓ Time delay for dosing



INR: Point of Care Testing

- ✓ Device is Portable
- ✓ POC System: *Coagucheck XS Monitor*
- ✓ Finger Puncture with a Lancet
- ✓ Result provided to patient immediately
- ✓ Non-Invasive
- ✓ Dosing determined and communicated to Patient
- ✓ Utilize Medical Directive for Dosing/Time to Next Appointment

INR: Point of Care Testing

- ✓ Investigate Abnormals:
 - ✓ Change in Meds
 - ✓ Change in Diet
 - ✓ Change in Health
- ✓ Utilize calendars to track therapy
- ✓ Patient Brings Calendar to each Appointment
- ✓ Document Tablet Strength and Target INR
- ✓ Daily therapy written in calendar
- ✓ INR Documented in Calendar
- ✓ Date of Next Appointment Documented in Calendar



CoaguChek XS
PT Test
CoaguChek XS PT Test
1000 micrograms
100% accuracy
100% accuracy
100% accuracy
100% accuracy

CoaguChek XS
PT Test
24 TESTS / VIAL
2.30 mL
100% accuracy

Handwritten notes on a piece of paper inside the carrying case, including the name "John W. King" and the date "2/11/2014".

McMaster University
HEALTH SERVICES
Family Medicine
McMaster University Health Services

WARFARIN DOSING CALENDAR

Department of Family Medicine
McMaster Family Health Team, INR Clinic
Bring this calendar anytime you see a physician!





Standardized Documentation

- ✓ Electronic documentation: OSCAR EMR
- ✓ INR results
- ✓ Identifiable causes for out of range results
- ✓ Direction given to patient
 - ✓ Total weekly dosing
 - ✓ Change: Top up/hold and change in schedule
 - ✓ Dosing schedule
 - ✓ Weeks to next appointment/date of next appointment
- ✓ Consultation: Name and credentials of person consulted

Standardized Documentation

INR Flowsheet - 86 years

ooscarmcmaster.org https://stonechurch.ooscarmcmaster.org:11042/oscar_sfhc/oscarEncounter/oscarMeasurements/TemplateFlowSheet.jsp?demographic_

INR Flowsheet

86 years Edit Last Only Only out of Range All Custom Print

#Of Elements Start Date End Date go Help | About | License

Medication	Total mg Warfarin per week	Start Date	End Date
Warfarin Weekly Dose	25	2011-10-05 0M 1	
	27.5	2011-09-30 0M 2	
	27.5	2011-09-07 1M 3	
	27.5	2011-08-24 1M 4	
INR	3.1	2011-10-05 0M 19	
	2.6	2011-09-30 0M 20	
	9.6	2011-09-28 0M 21	
	2.5	2011-09-07 1M 22	

Comments

1. reduced dose today, reduced weekly dose by 2.5mg
2. no change
3. no change
4. no change
5. change
6. top up and change
7. Top up and weekly increase
8. Increase weekly dose
9. no change
10. hold and change
11. hold and dose change
12. No change
13. change
14. change
15. change
16. dose held and wkly dose reduced
17. change, aiming for total weekly dose of 30 mg
18. no change
19. (2.5mg tab) 1 tab Tues/Thurs/Sat/Sun, 2 tabs Mon/Wed/Fri RTC Oct 19
20. (2.5 mg tabs) 1 tab Tues/Thurs/Sat and 2 tabs the other days. RTC wed Oct 5
21. Hold x2days and rc on Fri Sept.30/11
22. (2.5mg tab) 1 tab Tu,Th,Sat and 2 tab other days test 3/52 sept 28/11
23. (2.5mg tab) 1 tab Tu,Th,Sat and 2 tab other days test 2/52 sept 7/11
24. (2.5mg tab) 2 tabs M,Fr,Sat, 3 tabs Wed and 1 tab other days rc 1/52 Aug 24/11
25. (2.5mg tab) top up 2.5mg today then 2 tabs M,W,F and 1 tab other days rc 1/52 Aug 17/11
26. (2.5mg tab) top up of 2.5 mg today then 2 tabs every Mon and Wed and 1 tab the other days. RTC 1/52, Aug 10, 2011
27. (2.5mg tab) 1 tab daily test 2/52 july13/11
28. (2.5mg tab) 1 tab daily test 2/52 july13/11
29. (2.5mg tabs) hold today then 1 tab daily rc 1/52 June 29/11, conferred with Kathy DeCaire
30. (2.5 mg tabs). Hold today. 2 tabs on Mon and Wed. 1. RTC 1/52. June 22
31. INR from june 3 at Juravinski.will re test june 10 at SFHC
32. (2.5mg tabs) continue 2tabs M,W,F, and 1tab other days, rc 2wks June 15/11

Standardized Documentation

Old Measurements

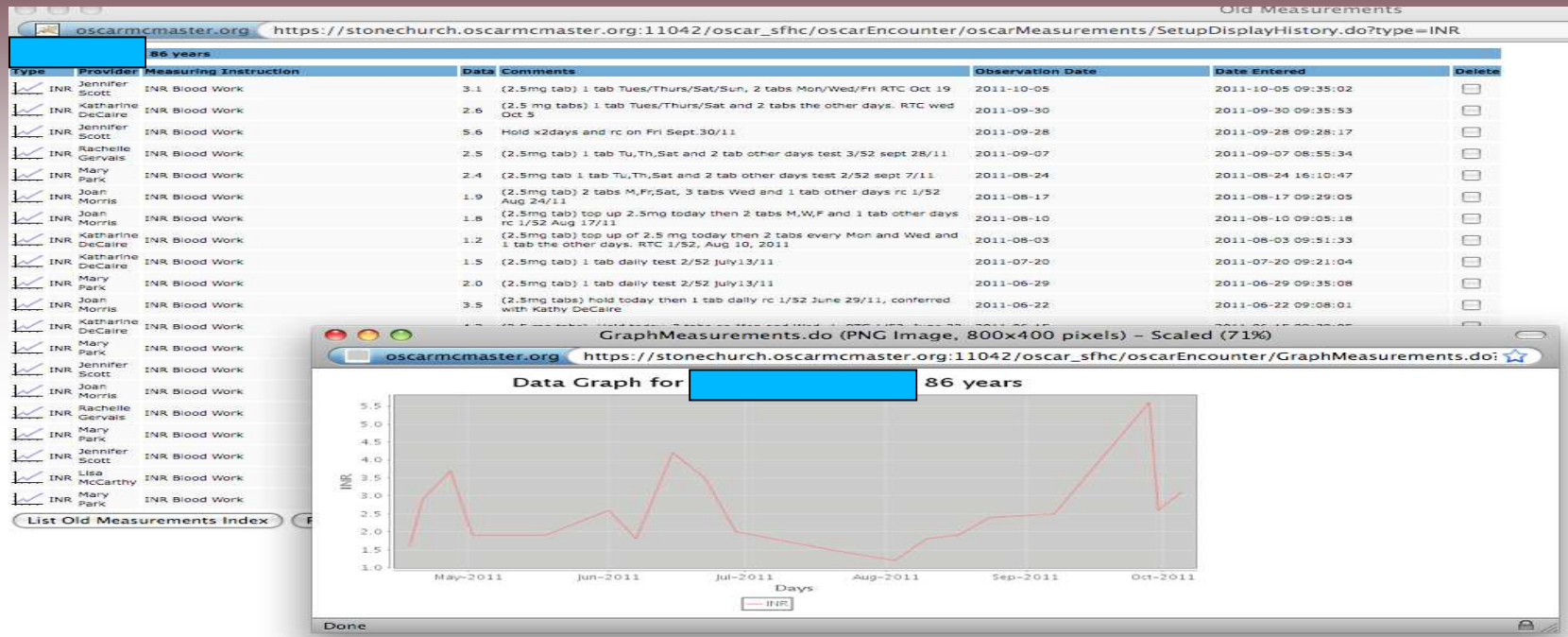
oscarcmcmaster.org https://stonechurch.oscarcmcmaster.org:11042/oscar_sfhc/oscarEncounter/oscarMeasurements/SetupDisplayHistory.do?type=COUM

Type	Provider	Measuring Instruction	Data	Comments	Observation Date	Date Entered	Delete
COUM	Jennifer Scott	Total mg Coumadin per week	25	reduced dose today, reduced weekly dose by 2.5mg	2011-10-05	2011-10-05 09:35:02	<input type="checkbox"/>
COUM	Katharine DeCaire	Total mg Coumadin per week	27.5	no change	2011-09-30	2011-09-30 09:35:53	<input type="checkbox"/>
COUM	Rachelle Gervais	Total mg Coumadin per week	27.5	no change	2011-09-07	2011-09-07 08:55:34	<input type="checkbox"/>
COUM	Mary Park	Total mg Coumadin per week	27.5	no change	2011-08-24	2011-08-24 16:10:47	<input type="checkbox"/>
COUM	Joan Morris	Total mg Coumadin per week	27.5	change	2011-08-17	2011-08-17 09:29:05	<input type="checkbox"/>
COUM	Joan Morris	Total mg Coumadin per week	25	top up and change	2011-08-10	2011-08-10 09:05:18	<input type="checkbox"/>
COUM	Katharine DeCaire	Total mg Coumadin per week	22.5	Top up and weekly increase	2011-08-03	2011-08-03 09:51:33	<input type="checkbox"/>
COUM	Katharine DeCaire	Total mg Coumadin per week	20	Increase weekly dose	2011-07-20	2011-07-20 09:13:43	<input type="checkbox"/>
COUM	Mary Park	Total mg Coumadin per week	17.5	no change	2011-06-29	2011-06-29 09:35:08	<input type="checkbox"/>
COUM	Joan Morris	Total mg Coumadin per week	17.5	hold and change	2011-06-22	2011-06-22 09:08:01	<input type="checkbox"/>
COUM	Katharine DeCaire	Total mg Coumadin per week	22.5	hold and dose change	2011-06-15	2011-06-15 09:39:05	<input type="checkbox"/>
COUM	Jennifer Scott	Total mg Coumadin per week	25	No change	2011-06-01	2011-06-01 09:37:20	<input type="checkbox"/>
COUM	Joan Morris	Total mg Coumadin per week	24	change	2011-05-18	2011-05-18 09:13:41	<input type="checkbox"/>
COUM	Rachelle Gervais	Total mg Coumadin per week	23.75	change	2011-05-09	2011-05-09 15:09:20	<input type="checkbox"/>
COUM	Mary Park	Total mg Coumadin per week	22.5	change	2011-05-02	2011-05-02 10:07:11	<input type="checkbox"/>
COUM	Jennifer Scott	Total mg Coumadin per week	17.5	dose held and wkly dose reduced	2011-04-27	2011-04-27 09:39:08	<input type="checkbox"/>
COUM	Lisa McCarthy	Total mg Coumadin per week	30	change, aiming for total weekly dose of 30 mg	2011-04-21	2011-04-21 16:11:19	<input type="checkbox"/>
COUM	Mary Park	Total mg Coumadin per week	35	no change	2011-04-18	2011-04-18 09:29:51	<input type="checkbox"/>

List Old Measurements Index Print Close Delete Graph



Standardized Documentation



INR Clinic: Medical Directive

- ✓ Delegated procedures:
 - ✓ Obtain INR result using the Coagucheck XS Monitor
 - ✓ Adjust Warfarin dosing according to algorithm
 - ✓ Provide prescription for Warfarin
 - ✓ Initiate laboratory requisitions



INR Clinic: Medical Directive

- ✓ RPN may advise dosing and follow up testing interval:
 - ✓ Target INR 2-3 and result 1.8-3.2
 - ✓ Target INR 2.5-3.5 and result 2.3-3.7
- ✓ Outside parameters: Consult NP/pharmacist
- ✓ INR > 5: Consult physician
- ✓ Guides testing intervals
- ✓ Dose adjustments based on patient risk and past response

INR Clinic: Medical Directive

- ✓ Guidelines:
 - ✓ Potential reasons for non-therapeutic INR
 - ✓ Guidelines for Vitamin K administration
 - ✓ Characteristics associated with increased bleeding
 - ✓ Checklist for evaluation of bleeding
 - ✓ Duration of therapy

INR Clinic: Patient Satisfaction

- ✓ Patient numbers Increasing and minimal drop off
- ✓ Feedback we have received from our patients:
 - ✓ The INR clinic is very efficient
 - ✓ Find finger prick method easier and less painful then venipuncture
 - ✓ Patients appreciate the shorter wait times
 - ✓ Patients not having to wait for results and dosing instructions
 - ✓ The Warfarin calendars are very helpful and easy to follow
 - ✓ Patients enjoy seeing the same team members every week

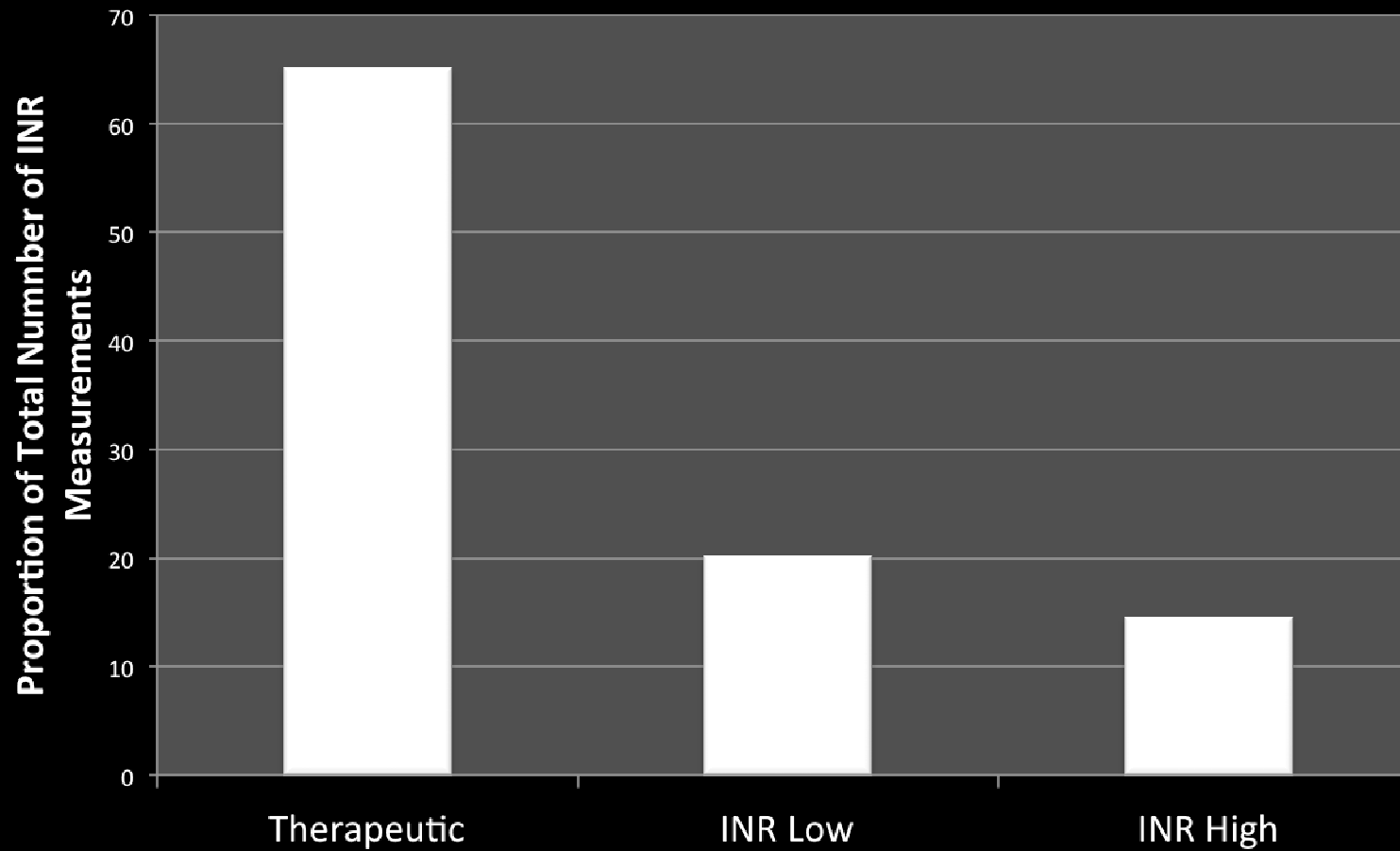


INR Clinic: Clinical Results

- ✓ Total of 1915 patient visits to INR clinic in 2010
- ✓ 1915 visits by 124 patients seen in 2010
- ✓ 65% of INR measurements were within the therapeutic range

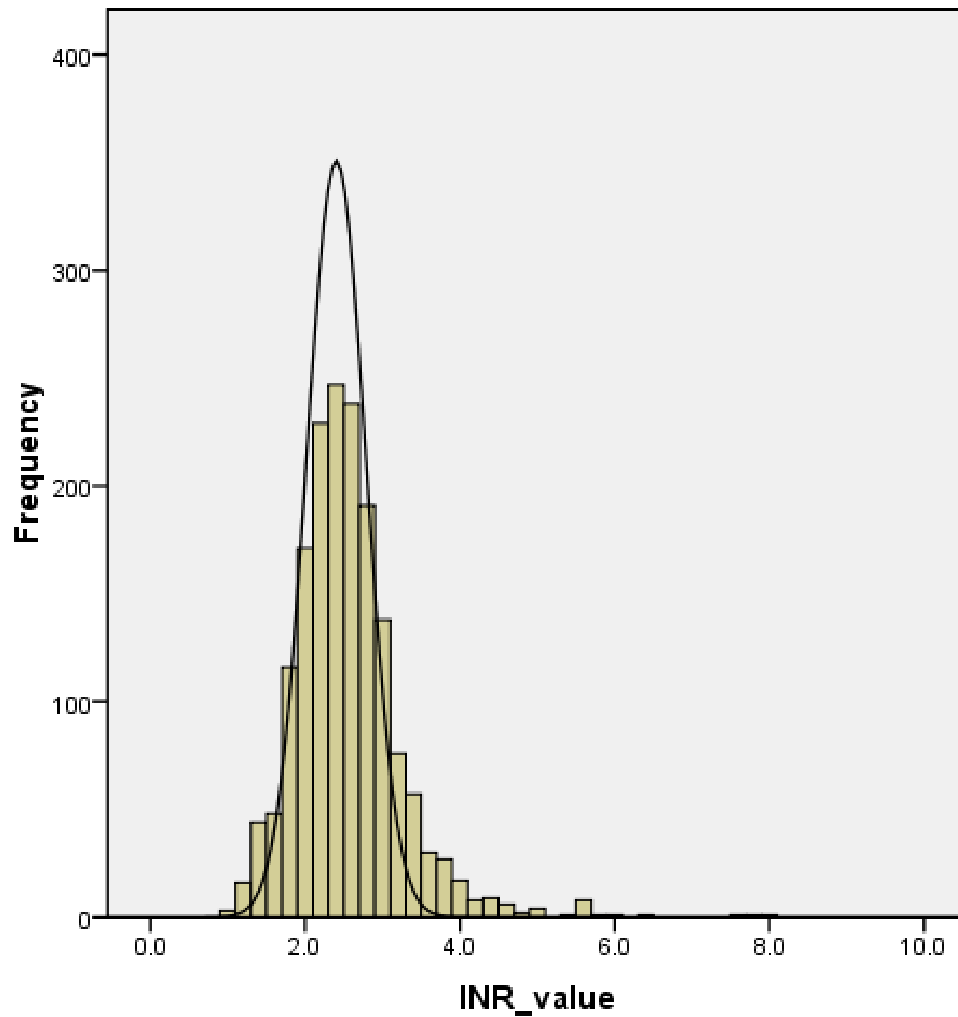


Stone Church INR Clinic - Proportion of INRs Within Therapeutic Range for 2010



St

medicine
Health Team



Distribution of INR Results - 2010

Mean = 2.5

Standard Deviation = 0.7

N = 1692

(limited to those with a target
INR of 2 to 3)

INR Clinic: Cost Analysis

- ✓ Total annual supply costs: \$12,952
- ✓ 4 clinic rooms
- ✓ Staffing: 3 RPNs, NP/pharmacist monitor, administrative support
- ✓ Staff are funded to support program costs
- ✓ Staff managing INR's efficiently with POC clinic
- ✓ Reduce time tracking down labs, calling patients with dosing instructions



Thank You!

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