

ETOBICOKE MEDICAL CENTRE

Family Health Team

ANTICOAGULATION HEALTH SERVICE TEAM

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BACKGROUND

- EMCFHT has existed > 40 years
- 17 Family Physicians
- Process patient improvement identified → Need for CHANGE
- Development Team created



THE JOURNEY...

CREATING INFRASTRUCTURE

- Development of Medical Directive
- Additional Staff and Training
- Electronic INR flow sheet
- Warfarin patient database
- Development of INR Voicemail box
- Development of INR newsletter



THE JOURNEY...

- 6 months to be fully functional
- Pilot – started with 1 MD's patients
- 1 RPN + Pharmacist



SUCCESS / LEARNING

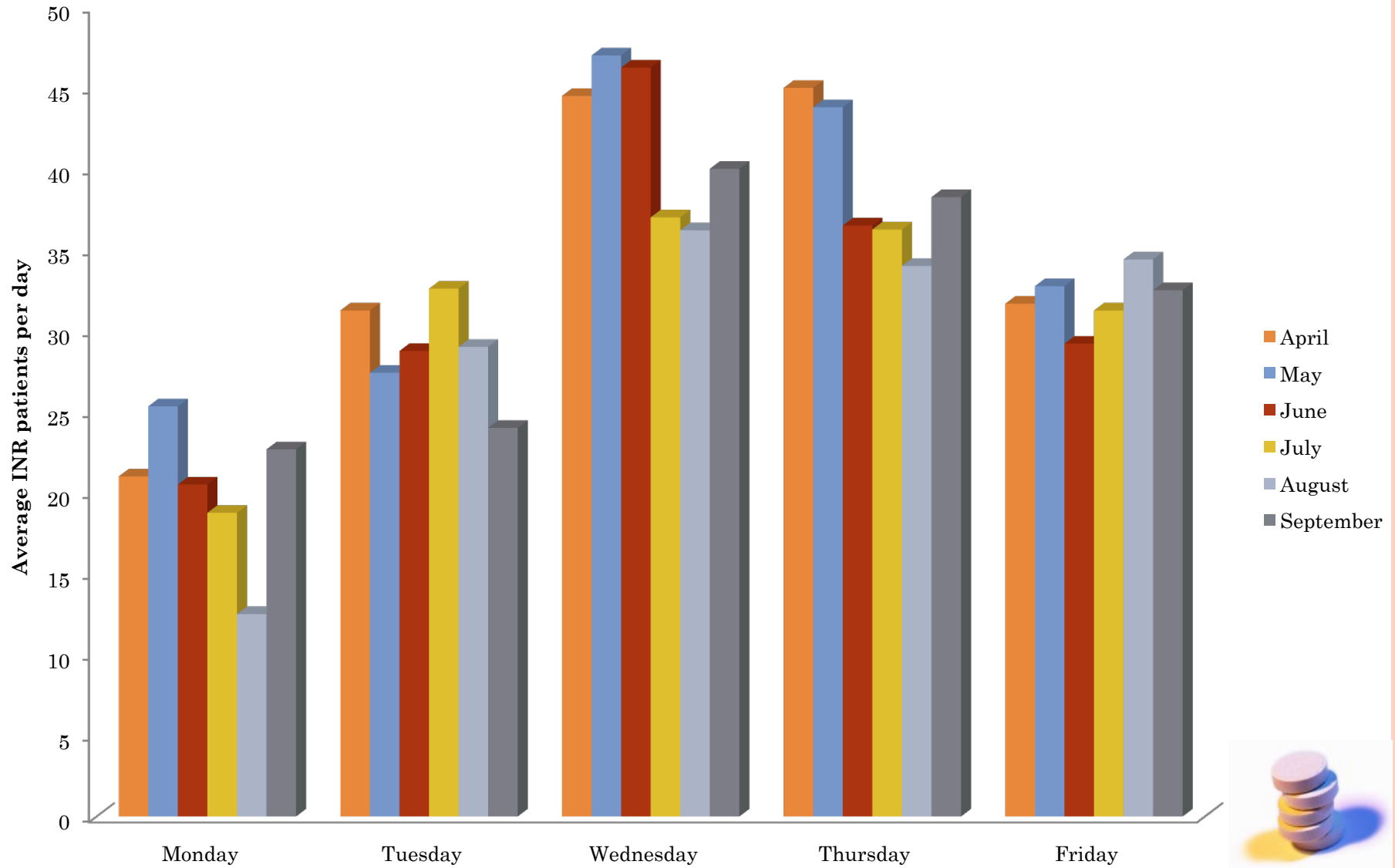
- Process worked!
- Provided continuity of care

BUT ...

- Limited role
- Warfarin patient load fluctuates daily
- Coverage for absence.



Average INR Managed per day



ACHST TODAY

OBJECTIVE

Optimal monitoring, patient safety, education, and access to care.

- Team consists of MD, Pharmacist, Nurse Practitioner, RPN, 3 RNs and Admin support.



NEW WARFARIN PATIENT

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Warfarin Initiation Consult
and Medication Review



Warfarin Education
Consult



Anticoagulation Database
Registry



WARFARIN DOSING

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Warfarin Dosing Algorithm

Guideline for action and dose adjustment in order to achieve an INR of 2.5 (Range: 2.0 to 3.0).

INR Value	Dosing Adjustment	INR Check
Managed by Nurse, Pharmacist, or Physician		
INR < 1.5	Increase weekly dose by 10 to 20%. Consider extra dose. <small>*Consult clinical pharmacist or MRP if the patient has a mechanical heart valve or if they had an acute VTE within the previous 6 weeks.</small>	Repeat INR in 4-7 days
INR 1.5 to 1.9	Increase weekly dose by 5 to 10%. If INR is below 1.8 consider extra 0-0.5 dose. If INR is 1.8 to 1.9 consider continuing current dose.	Repeat INR in 7-14 days
INR 2.0 to 3.0	Continue current dose.	Monitor INR in: - 5-10 days if 1 INR in range - 2 weeks if 2 INRs are in range - 3 weeks if 3 INRs are in range - 4 weeks if 4 INRs are in range
INR 3.1 to 3.5	Hold 0 to 0.5 dose and decrease weekly dose by 0 to 10%. If INR is 3.1 to 3.2 consider continuing current dose.	Repeat INR in 7-14 days
INR 3.6 to 4.0	Hold 0 to 1 dose and decrease weekly dose by 0 to 15%.	Repeat INR in 4-7 days
INR 4.1 to 4.9	Hold 0 to 2 doses and decrease weekly dose by 5 to 15%.	Repeat INR in 4-7 days
Managed by Nurse with Pharmacist or Physician Consultation		
INR 5.0 to 9.0 (no significant bleeding)	Hold 1 to 2 doses and decrease weekly dose by 10 to 20%. OR Hold warfarin and send to emergency department if patient is at risk of bleeding. Usual management: Hold 1 dose and administer oral Vitamin K, 1 to 2.5 mg orally* if patient is at risk of bleeding. Resume therapy at a lower dose when INR is therapeutic. <small>* Vitamin K is available in gasepppppp solution, 10 mg/100µl, that can be given orally or s.c.</small>	Repeat INR in 2-4 days Repeat INR in 1-2 days
INR > 9.0 (no significant bleeding)	Hold warfarin and send to emergency department. Usual management: Hold warfarin and administer Vitamin K 2.5 to 5.0 mg orally*. INR will reduce substantially in 24-48 hours. Resume therapy at a lower dose when INR is therapeutic. <small>* Vitamin K is available in gasepppppp solution, 10 mg/100µl, that can be given orally or s.c.</small>	Repeat INR in 1-2 days

Note: EMCFHT does not keep Vitamin K on hand. If required, patient should be sent to emergency department.



SUCCESS

- MD Satisfaction
- Patient Satisfaction
- Time in Therapeutic Range – 78%
- Warfarin Patient database
- Ongoing reports on patient
- Statistical reports
- Newsletter



BEFORE AND AFTER PROCESS TIME

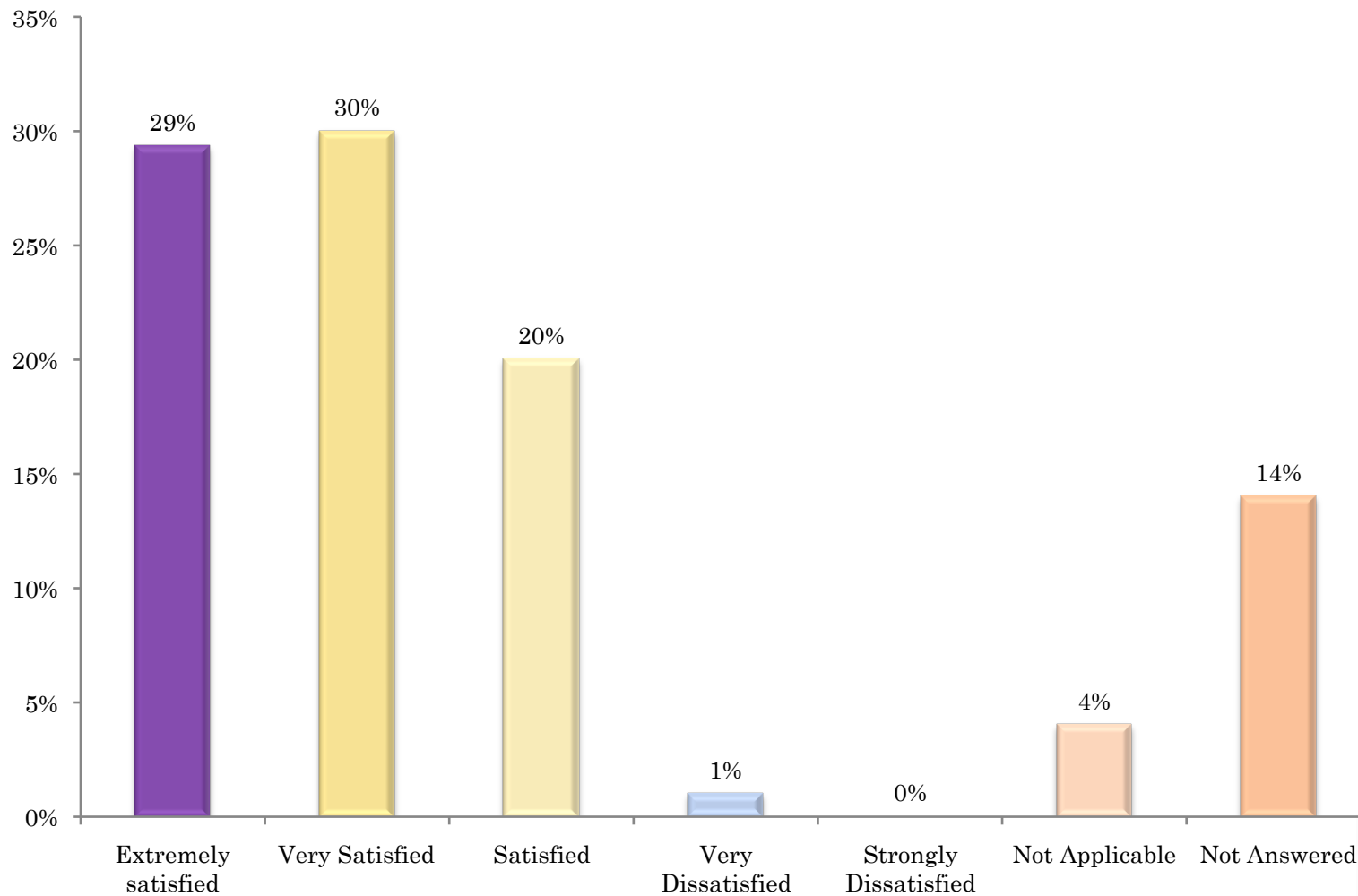
OLD

TASK	# OF STAFF	TIME (daily)
Admin person post labs (am, midday, pm & weekends)	1	5 – 10 minutes/ posting 30 minutes (10x3)
Admin person collects paper labs, separates INR results from other lab results, distributes INR results to respective DA and MD	1	45 minutes
DA writes results in red INR binder and gives to MD	8	5 minutes/DA 40 minutes (5x8)
MD manages INR results	17	10 - 20 minutes
DAs notify patients of INR results	8	2-5 minutes/pt x 8 DAs

NEW

TASK	# OF STAFF	TIME (daily)
Nurse post labs (am, midday, pm)	1	5 – 10 minutes/ posting 30 minutes (10x3)
Nurse manages INR results	1-2	30-40 minutes
Nurses calls pts to notify them of results (investigation & education)	1-2	30 minutes

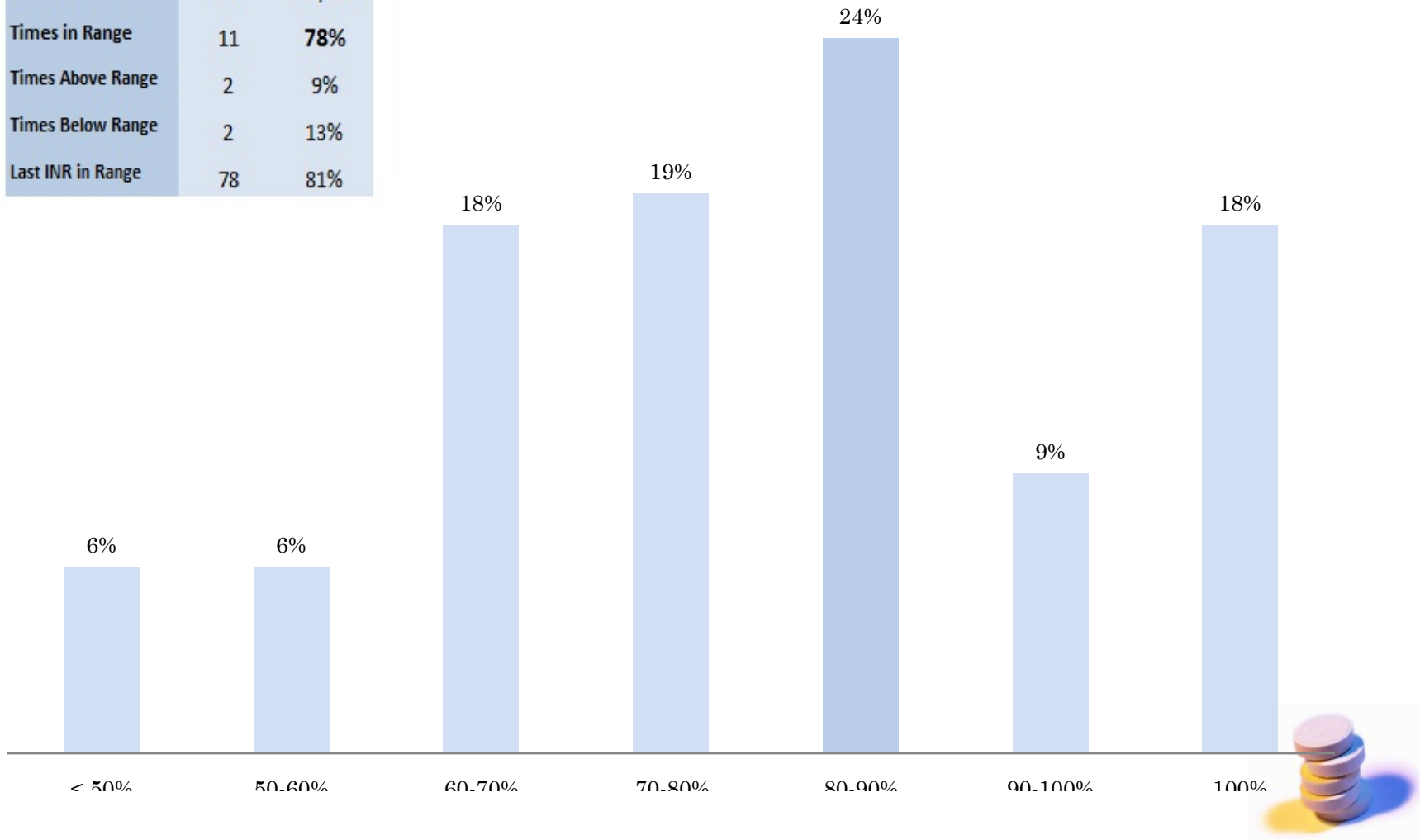
Overall satisfaction with the services you receive from the Anticoagulation Team



Percent time in therapeutic INR range

TTR Results

	Average	%
INRs in Total	14	1.5/mo
Times in Range	11	78%
Times Above Range	2	9%
Times Below Range	2	13%
Last INR in Range	78	81%



INNOVATIVE IDEAS

- INR over 35 days
- Completely electronic – one point stop
- Flow Sheet / PMAC



INR OVER 35 DAYS	AVERAGE
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May to Oct

Total Patients	22.90
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>6mos	0.10
>3mos	2.65
2-3mo	3.45
35da-2mo	17.10

Stable	13.60
Inactive	1.15
Out of town	1.42
Contacted Today	14.14
Contacted Recently	5.43

INR Done (1w f/u)	10.14
INR Done (2w f/u)	13.52
Out of total (1w)	45%
Out of contacted (1w)	71%
Out of total (2w)	60%
Out of contacted (2w)	95%

INR OVER 35 DAYS

- EMR (PS) search
- Every Monday
- Patient satisfaction



INR FLOW SHEET

Patient: [REDACTED]	Contact Person: [REDACTED]	Contact Number: [REDACTED]	Ok to leave message: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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INR Target Range: 2-3	Reason for Anticoagulation: Atrial Fibrillation/Pacemaker/Congestive Heart Failure	Start Date: [REDACTED]
		Target Stop Date: Indefinite

Strength of Coumadin Tablets: 2mg	Special Instructions: Please call L/L home care 416-603-2446 (press 1 then 3)
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Service Date day/mos/yr	Received Date day/mos/yr	INR level	New Dose	Repeat Bloodwork	Ordered by	Previous dose confirmed	Date Informed Informed by	Comments
09/07/2012	10/07/2012	2.3	3 mg qd	4/52aug7	s ag	Yes	10/07/2012 VS	L/L schedul for Aug7 -VS
07/08/2012	08/08/2012	2.4	3mg od	1/52sep6	THP	Yes	08/08/2012 VS	L/L schedul Sep5 - VS
05/09/2012	06/09/2012	3.0	3mg od	3/52sep26	cab	Yes	11/09/2012 cab	L/L sched sep 26 had biopsy on nose sept 6. see plastic surgeon sept 17.12 p/a 12:44 - 2:20 cab
26/09/2012	27/09/2012	2.8	3mg od	4/52oct24	RY	Yes	27/09/2012 RY	Spoke with pt L/L sched Oct 24 - VS



Oct 9, 2012

PMAC

CAB

Date: Oct 9, 2012 1 ...zie Alexis Benson have reviewed the privacy policy, PMAC rationale and rules and the patient understands and consents. Developed by: New Vision Family Health Team, 2010

Indication for Anticoagulation:

- Venous thromboembolism Rt. Leg DVT
- Atrial fibrillation
- Prosthetic heart valves
- Thrombophilia

- Secondary prevention of myocardial infarction
- Recurrent thromboembolic events
- Other :

Last INR: 2.5 Date of last INR: Sep 11, 2012

Last Dose: 2mg Tues +Th 2.5mg rest

Minor Bleeding Major Bleeding

Clot Location: Vitamin K Needed Lot #:

Today's INR: 2.3 In Range: Yes No

Recheck INR in: 1 month If Other:

TODAY'S PLAN Warfarin dose: Same

Has 2.5 mg tablets

2mg Tues +Th 2.5mg rest

Comments and Concerns

Coumadin started March 2012 Target stop date 6 months (Sept 2012) Msg sent to Dr. Savin

Target INR: 2.0 to 3.0

Expected Duration of Therapy: Other If Other: Unknown

Reasons NOT in Range

- Unexplained
- Drug Interaction Drug Name:
- Warfarin Initiation Time to stable INR:
- Acute Illness
- Missed Dose Misunderstood Directions Dossette
- Diet
- Alcohol
- Held Intentionally



FUTURE OPPORTUNITIES

- Expansion of POC service
- System navigation
- Integrating Nursing Informatics



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Q & A

PATIENT SURVEY COMMENTS

“The quality of service; Professional Team Members; ease of Access -creates "Peace-of-mind"+major reduction in my 'stress' level!” (FM, 73)

“Dedicated, focused, specialized” (AA, 74)



PATIENT SURVEY COMMENTS

“Prompt and focused support. Friendly and informative” (KP, 90)

“I have used the services of 3 or more staff members and the point of service was excellent. The Etobicoke Medical Center Family team has been significantly improved by your team. Thanks” (ET, 77)



PATIENT SURVEY COMMENTS

“I can't believe how quickly your team gets test results to me - almost before I get home from the lab ... Your staff with whom I have interacted, I find to be pleasant, knowledgeable, professional.”

(LM, 67)



PATIENT SURVEY COMMENTS

“I learned a lot about INR from talking with the nurses on phone - very helpful and informative. Thank you for this valuable service.”

(AA 78)

