



KIDCLOT

Kids Informed Decrease Complications: Learning on Thrombosis



# EmPoWAR:

## Edmonton Pediatric Warfarin Education

Home INR Testing using the CoaguChek XS  
A Comprehensive Educational Guide to **EmPoWAR** Children Requiring  
Warfarin & their Families"

### Disclaimer

The information available in this package represents the best evidence currently available and is provided for informational purposes only. It is not in anyway intended to be a substitute for professional medical advise, diagnosis or treatment.

Always seek advise from your physician or a physician specializing in pediatric thrombosis with any questions you may have about your medical condition. Never disregard or delay seeking medical advise because of something you have read in this package.

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Special thanks to Addison and his family for their pictorial support in this project.



The pediatric thrombosis program at Stollery Children's Hospital is always there to help you if you have a problem or question.

Call (780) 407-8822 and ask to have the Pediatric Thrombosis Program paged.





### EmPoWAR: Edmonton Pediatric Warfarin Point of Care Home INR Testing Policy

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March, 2015

#### Purpose

This document provides guidance on quality assurance (QA) practices for patients using or planning to use POC INR devices for determination of prothrombin time (INR) in capillary blood from the fingertip. The goal of this document is to improve the performance of POCT INR. This Plan highlights the critical components of a POCT quality assurance program.

#### How POC INR Tests are Used

POC INR tests are used for determining INR in patients on warfarin. POC INR devices and test strips are used for determination of prothrombin time in capillary blood or from non-anticoagulated venous blood. INR self-testing facilitates more frequent INR testing which is associated with improved safety and efficacy of warfarin. In addition, self-testing is highly associated with improved patient health related quality of life.

#### Importance of a Quality Assurance Program

Although POC INR tests are simple to use and can provide reliable results when the manufacturer's directions are followed, mistakes can occur at any point in the testing process. To reduce mistakes, a QA program must be in place before offering POC INR testing. The guidelines in this document outline the basic elements of a QA program, as it applies to POC INR testing.

#### 1. Each POC device has had the calibration verified

- 1.1. Prior to initiating any testing on the device, the device undergoes a minimum of 5 split-sample test comparisons between the POC INR device and the conventional laboratory INR. The split-sample test comparison is considered acceptable if results are within 0.5 INR units.
- 1.2. Prior to using the device as the primary method of INR testing, a minimum of 3 split-sample test comparisons between the POC INR device and the conventional laboratory method must be performed on each patient. The split-sample test comparison is considered acceptable if results are within 15% of each. In certain situations approved by the health provider, a meter to meter comparison may be used.
- 1.3. A valid comparison requires that the lab venipuncture must be performed within 60 minutes of the capillary puncture used for the POC INR device.

#### 2. Train operator

- 2.1. All staff, patients and/or caregivers involved in providing any aspect of care using POC INR device must have the necessary training, skills.
- 2.2. Individuals must take part in a managed POC INR testing program.
- 2.3. Individuals must receive adequate training on key competencies and show proof of competency prior to performing self testing or self management



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- 2.4. Individuals must perform an annual direct observation yearly.
- 3. Ensure consumables used within expiry date.**
  - 3.1. The programmed time and date on the device must be set accurately at initiation of use and confirmed with each INR test. The device will identify expired consumables will not process the INR test. Expired consumable may provide unreliable INR results.
- 4. Results are accurately recorded and reported to the health provider.**
  - 4.1. The INR result, date, and warfarin dose must be recorded and reported to the appropriate health provider.
  - 4.2. Patients performing self testing must record and report the INR result at the time each INR test is performed. This may be done using paper documentation and telephone reporting or through on-line submission ([www.kidclot.com](http://www.kidclot.com)) for patients enrolled to report using this method.
- 5. Results are examined relative to the patient clinical picture and investigated when patient results are discrepant.**
  - 5.1. Healthcare provider is notified of critical or unexpected results.
  - 5.2. All INRs  $< 1.8$  and  $> 3.7$  must be reported immediately to the health provider in order to receive medically appropriate action
  - 5.3. The health provider will provide patient care order to adjust warfarin dose.
  - 5.4. Discrepant results (those not consistent with the patients clinical presentation will be investigated. A laboratory INR for comparison purposes may be indicated. It is the responsibility of each program to report and investigate sentinel events.
- 6. Devices must be properly disinfected between each patient use.**
  - 6.1. Cavi-wipes or product equivalent may be used.
  - 6.2. The test strip guide cover may be removed and window wiped gently with damp gauze to cleanse area. (do not use any chemical agent in this area)
- 7. A patient/child is eligible for POC INR monitor use if:**
  - 7.1. Patient's warfarin therapy is managed through the KIDCLOT program or an equivalent established program.
  - 7.2. Child/family/guardian agrees to follow the medical advice of their warfarin health care provider.





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7.3 Child/family/guardian are fluent in English or have adequate supports to facilitate communication between the patient and health care provider at regular interval (as frequently as twice weekly). Parent/guardian agrees to loan agreement.

### 8. Loan Agreement



Meters will be loaned for a 1 year term providing the child/ parent/guardian (lessee):

- 8.1. Participate in education on warfarin and POC INR testing.
- 8.2. Sign the KIDCLOT Meter Loan Agreement.
- 8.3. Demonstrate proficiency in POC INR testing.
- 8.4. Demonstrate adequate knowledge of warfarin and POC INR testing (complete short written exam).
- 8.5. Agree to the policies for POC INR monitoring as described above including reporting of the INR
- 8.6. Demonstrates ongoing adherence to medical advice (specifically INR testing, documentation and reporting of INRs and taking of warfarin.
- 8.7. Meter serial number will be recorded by the KIDCLOT program and linked with patient name.
- 8.8. Meter must be returned if requested by health provider.
- 8.9. The lessee of the meter will take good care of the meter and is financially responsible for any damage to the meter considered beyond normal depreciation.
- 8.10. When the one year initial loan period has ended.
- 8.11. The monitor may continue to be available for loan.
- 8.12. Patients may choose to purchase the meter. (Patients who received a new meter at start of therapy are required to purchase their existing meter. Warranty coverage through Roche after liaison with KIDCLOT program).
- 8.13. Test strips for INR testing are required. An average of 24 test strips per year is required however INR stability may result in more/less test strips being used.
- 8.14. Lancets for lancing device are required.

### 9. Required Monitoring and Follow-up

INR testing must be performed and reported as recommended by the health provider. Child/ parent/caregiver are required to:

- 9.1. Attend yearly clinic follow up (consultation) with the health provider.
- 9.2. Meter is brought to yearly follow up appointments for examination to ensure it is in good working order.
- 9.3. Results should be recorded in a logbook (patient's logbook) and presented to the Ordering Healthcare Provider at every consultation.



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9.4. Perform an INR test under direct supervision of the health provider to ensure the blood sample is applied to the test strip correctly.

9.5. Perform two INR comparisons per year (meter/lab, meter/meter).

### 10. Models of Care Using POC INR Devices

10.1. Clinic POC INR testing is where the INR test is performed within a clinic or hospital setting and the health provider recommends the warfarin dose.

10.2. Patient self testing (PST) using a point of care (POC) Home INR meter is where the patient/family test the INR and report the INR to the health provider. The health provider then makes the warfarin dose decision and advises the family.

10.3. Patient self management (PSM) takes warfarin management a step further where a patient performing home INR self testing takes an active role in managing their warfarin therapy. Warfarinized patients participate in education about warfarin management and dosing. Patients and their families begin an apprenticeship where they learn to self-adjust their warfarin dose using a dosing guide. Patient self management is believed to further improve warfarin management due to increased knowledge and participation in their healthcare. Warfarin self management is preferred by patients, improves health related quality of life, adherence, and results in better patient outcomes.

### References

AHS Point of Care Testing Quality Plan for POC INR June 2014;  
<http://204.244.183.163/labFrame.asp?DID=25040&FLDVr=4258>

AHS Requirements for Maintaining Competency, February 2015;  
<http://204.244.183.163/labFrame.asp?DID=1461>

Christensen TD, Larsen TB, Hjortdal VE. Self-testing and self-management of oral anticoagulation therapy in children. *Thrombosis and Haemostasis* 2011;106:391-7

Bauman ME, Black K, Kuhle S, Wang L, Legge L, Callen-Wicks D, et al. KIDCLOT: the importance of validated educational intervention for optimal long term warfarin management in children. *Thromb Res.* 2009 Mar;123(5):707-9,

Bauman ME, Black K, Bauman ML, et al. EMPoWarMENT: Edmonton pediatric warfarin self-management pilot study in children with primarily cardiac disease. *Thromb Res* 2010;126:e110-e5)



## LABORATORY TESTING

Your METER INR result must be the same as the INR result done in the laboratory!!



The POC INR meters have been tested among adults and children to prove that they are safe and give accurate results.

Most families and children say they like the POC home meter better than going to the laboratory to have their blood checked because it makes INR testing easier and you get your test results quickly.

It is important to be sure that the INR meter measures your blood properly.

**Three** of your blood samples will be sent to the lab for measuring your INR and you will do an INR test on the with your blood on the meter at the same time. The INR test answers should be almost the same. This must be done every year.



We will ask you to do a test when you have finished learning about the INR meter and are ready to go home. This will help us to know if we are teaching you well.





## The POC Home INR Meter Program What you Have to do

- This book will help you and your parents to understand what you are expected to do if you use a POC INR meter on loan.
- Families are expected to **take good care** of the meter.
- This meter is on loan to you and may need to be returned
- You may purchase the meter.
- **You must** bring your meter with you to **every clinic appointment** with the doctor / nurse who in charge of helping you take care of your warfarin and your INR checks.



## The POC Home INR Meter Program How Does it Work?

1 We will loan you the meter free for about 12 months. Sometimes longer.

2 We will ask your parents for your credit card number to secure the cost of the meter. If the meter is not returned when it is requested your parents will be charged for the meter. This is so that other children will have a chance to use the meters too.

3 We will give you this magazine to read so you know a little about the meter.

4 Specially trained staff at the hospital will teach you and your family how to use the POC **INR** meter before you take it home.

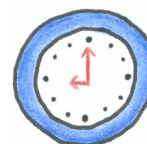
5 The learning is done over 2-3 days in 1 hour sessions. You and your parents must be available for the teaching sessions.

6 Your mom and dad will learn to do an **INR** blood check on themselves.

7 Then your parents will help you do an **INR** blood check on yourself.

8 It is important that you are able to do the **INR** blood check well by yourself before you go home with the monitor.

9 We will ask you to write a short test before you go home. Then to home you go!! You and your **INR** doctor or nurse will be talking often!





## Important Things About Using the POC INR Meter

If your meter is broken, damaged, or does not work properly call your program.



Your meter kit contains many small parts. This includes lancets, Penlet caps, batteries, test strips, capillary tubes, rubber ends, bottle cap etc. These may be dangerous if swallowed. This can result in injury or death. **Keep out of reach of small children.**

Do not use a cell phone or a cordless phone while you are doing a blood check on the monitor.



**Change the batteries when they are low.**

This will make sure that your blood check results are true.







## How to use your POC (Home) INR Meter

This teaching guide is to help you to learn how to use the **Coaguchek XS (Roche) Home INR meter**.



- ◆ A blood test (usually at the outpatient lab) is needed to test your **INR**.
- ◆ This guide is to help to teach children and their families how to perform a blood clotting test at home. This test is called an **INR**.
- ◆ It is important to learn how to do the test correctly to make sure that the test results are **true**.
- ◆ This guide will also help you to know who to call with the test result.
- ◆ **'Point-of-care (POC) home monitoring'** helps to keep your dose of blood thinner at a safe level which is within your **target range**.
- ◆ The **home INR** meter makes testing your blood much easier because only a finger prick is needed to get the drop of blood that is needed for the INR test.





## POC Home INR Testing using the CoaguChek XS Patient Performance Assessment

	Met	Not Met
1 Wash hands.		
2 Child should wash hands with warm water. Does not use alcohol to cleanse finger.		
3 Take meter, lancing device and test strips out of case and set on a flat surface.		
4 Insert new needle into lancing device and load (double check loading spring).		
5 Remove test strip from container and reapply lid to container immediately (ensure test strips are not expired or it will have an error message). Do not set the strip down or touch the end of the test strips where blood will be applied to avoid error messages.		
6 Insert test strip into meter (this will turn meter on).		
7 Check date and time on meter to ensure correct.		
8 Confirm the code number on meter screen is the same as the code on the test strips.		
9 Involve the patient in choosing which finger to lance.		
10 Touch 'M' button to begin meter warming and countdown. You will have 180 seconds within which to apply the drop of blood.		
11 Lance finger on the furthest side of finger (right side of finger on right hand; left side of finger on left hand) -then release grip on hand		
12 Move the meter close to the patient so it will not need to be moved while processing the blood sample.		
13 Use gravity to allow blood drop to form as a droplet. If necessary, milk finger from base up and towards the puncture site in one smooth motion.		
14 Once large drop of blood formed carefully move finger over meter strip and allow blood to drop to apply or very gently touch to strip on the "clear" area (do not smear blood to apply).		
15 Once drop applied hour glass will appear on screen. INR result will appear on screen.		
16 Document INR on outpatient anticoagulation log in MAR along with previous warfarin dose.		



## POC Home INR Testing using the CoaguChek XS Patient Performance Assessment

(continued)

17	Apply pressure to puncture site if ongoing bleeding using a gauze square.		
18	Discard of test strip and lancet in appropriate containers.		
19	Describes next steps if INR test unsuccessful.		
20	Describes timing of INR tests if validation is required.		
21	Describes reporting of INR to health team including changes in DIME.		
22	Confirm KIDCLOT receipt of family contact information.		
23	Ensure new code chip is inserted in the meter with each new box of test strips. Able to describe where new chip is found and placed within the meter.		
24	<u>Patient Able Verbalize Important Aspects of Warfarin Therapy.</u>		
25	Patient able to describe the influences on INR control (DIME).		
26	Patient verbalizes the importance of reporting DIME with each INR report.		
27	Patient able to describe reporting standards including out of range INRs (<1.6 and > 3.7).		
28	Patient able to verbalize approach if medical procedure planned & booked.		
29	Patient able to describe the importance of INR testing on the prescribed date and that this is mandatory.		
30	Patient understands that non adherence will put their child at significant health risk and will not be tolerated.		
31	Patient verbalizes that monitor is on loan and the patient is responsible for safe keeping and cost if lost or damaged.		



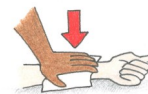


## What is a blood clot?

- A blood clot is when your blood changes from a liquid to a solid.
- This is usually a good thing, but sometimes it is a bad thing.
- A blood clot is normally a good thing because it will stop the bleeding when you cut or hurt yourself.
- A bad blood clot is when your body makes a clot when it does not need one.

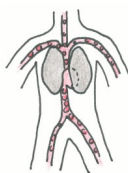
## What To Do To Stop Bad Blood Clots

- A blood clot is like very **thick blood** in one spot.
- When your body makes a blood clot when it doesn't need one, your doctor will give you medicine to help your body take care of the blood clot.
- The medicine is called a **blood thinner**. A 'blood thinner' does not really make your blood thin. It helps to **slow down** the time it takes for your blood to clot.
- If you cut yourself when you are taking a blood thinner, it will take about **2 to 3 times longer for you to stop bleeding**.
- Your doctor has prescribed warfarin because you have a bigger chance of getting a **"bad" blood clot**.



The **bad clots** usually form in the pipes that carry the blood back to the heart. These blue pipes are called veins (VAY-n).

Arteries (AR-ter-EES) are the red pipes. Arteries carry the blood from your heart to your body.



When your body makes a blood clot when it does not need one, it is called deep vein (VAY-n) thrombosis (throm-BO-sis).

You will know you have a **bad blood clot** because you will have pain and puffiness in the area where your clot is when you haven't hurt that area.

## How does a blood thinner work?

A **blood thinner** does not work to make the clot go away.

The **blood thinner** stops the blood clot from getting bigger.

Your body has its own "clot busters." Your body's clot busters work to break up the clot.



Sometimes a blood thinner may be used to stop your body from making a bad blood clot when you have had heart surgery.



'An-ti' means against, 'co-ag' means clot, & "anticoagulant" is a blood thinner.

## What is Warfarin?

**WARFARIN** (WAR-fa-rin) is an anticoagulant, or blood thinner. It is also called **Coumadin** (KOO-ma-din). It is taken by mouth.

It is important that your **WARFARIN** is working correctly for you. A blood test called an **INR** will tell us how long it takes your blood to clot. This helps your doctor and nurse to know that your **WARFARIN** is working as well as it needs to.

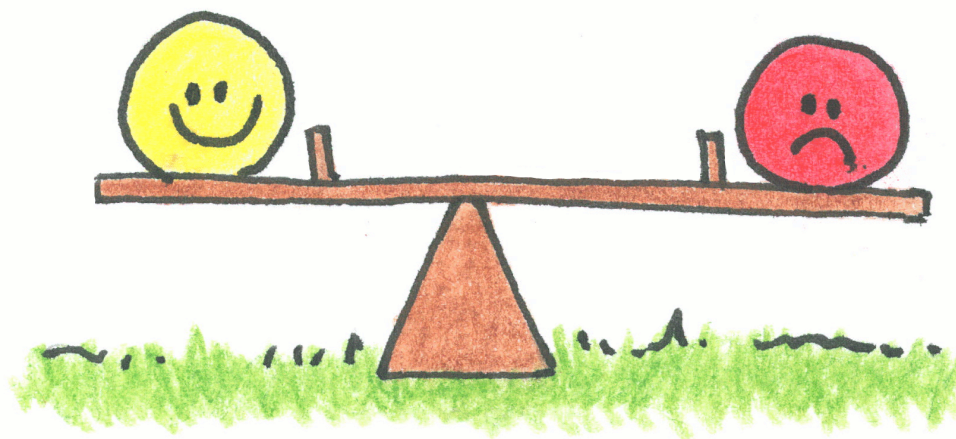
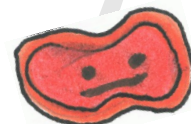




## Keeping you Safe on Warfarin is a Balance

If your blood has  
too much  
**warfarin** it can  
make you bleed.

If your blood does  
not have enough  
**warfarin** you  
might develop a  
bad blood clot



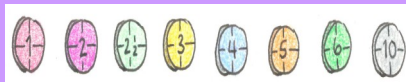
The only way to be sure your blood has the right  
amount of warfarin is to check your **INR** as often  
as your doctor or nurse tells you to.





STOLLERY  
CHILDREN'S  
HOSPITAL

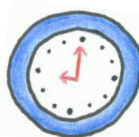
## Living Safe on WARFARIN



## COUMADIN

### WARFARIN: How should you take your warfarin?

Take your **Warfarin** at the same time every day.



Take your **Warfarin** by mouth.



The pills are **coloured**, with each different **colour**  
Each **colour** has a **different amount of medicine in it**.

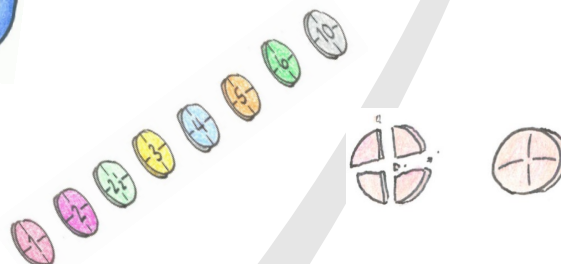
- ◆ Different **companies** make **Warfarin**. Make sure you get **Warfarin** from the **same company** each time.
- ◆ The **amount of medication** each company puts in a tablet is a **little bit different** and it may affect your INR.



If you  
receive  
pills from a  
different  
company,  
you'll know  
because  
they'll be a  
slightly  
different  
colour.



if your  
pills look  
slightly  
different,  
then  
check  
your **INR**  
in 5 days  
after  
starting  
the new  
pills





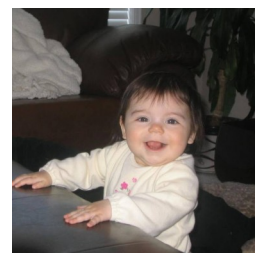


### Your Dose

Every child takes a different amount of **Warfarin**. The amount you take every day is called your "**dose**."



Your **dose** may change, depending on your **INR blood test**. Changes to your dose are normal!



Depending on your dose you may need to break the tablets into **halves** or **quarters**. A pill cutter is recommended.

- If you take a half of a tablet; take the other half the next day
- If you take a quarter of a tablet be sure to save the other 3 quarters to take over the next 3 days.
- Check your tablet color before leaving the pharmacy. If your tablet looks different than usual, test your INR within 3-4 days.



**Other medicines** will **change** how **Warfarin** works. If there are any changes to **medicines** you take, **tell the doctor or nurse** who helps you with your **Warfarin**.



**Vitamin K** works against your **Warfarin** and will help to lower your **INR**. Be sure you have **Vitamin K** to take home. **Put the Vitamin K away in your refrigerator** and **DO NOT take it unless** the doctor or nurse who helps you with your **Warfarin** tells you to.



**Keep your Vitamin K in a safe place so that you will have it and can find it when your doctor says that you need it.**



### What if I miss a dose?

- ♦ Take it if you remember it later the same day.
- ♦ If you don't remember it until the next day, skip it.
- ♦ If you have missed more than one dose, inform your care provider as many missed doses will affect your INR.

### What can change the effect of warfarin?

Warfarin effect can change on a **DIME** !

**D Diet** changes - green vegetables can affect your warfarin-but don't stop eating them. Just try to eat the same amount every week.

- **Alcohol** can affect the way warfarin works for you. 1-2 drinks is okay but do not binge drink.

**I Illness** - if you get sick with a cold, flu, nausea, vomiting or diarrhea or any other illness it may affect your INR.

- Call your care provider if you are ill or have stomach problems, vomiting or diarrhea for more than 1 day as this could affect your warfarin. If you have an INR meter, check your INR.

**M Medications** - any change in medications, including dose changes may affect your INR. This includes prescription medicines, over-the counter medicines, vitamins, and herbal products.

- If you have any medication change, including dose changes or starting antibiotics check your INR within 3-4 days.
- Any product containing aspirin or medicines similar to aspirin may be harmful when taking warfarin as it can increase the risk of bleeding.
- Avoid Ibuprofen (Advil®, Motrin®, Midol® Aleve®). If you feel they are needed discuss with your care provider before taking.
- Tylenol® may be safely used to treat pain and fever.

**E Error** (missed dose) - if you miss a dose it will affect your INR. If you miss a dose, take the missed dose as soon as you remember and call your care provider.



## How to follow your INR and your warfarin dose

INR is a **blood** test. It measures how fast your **blood** makes a clot.



**1** It's **VERY** important that you **check your INR on the day** your doctor or nurse tells you to. This helps to keep you safe when you are taking **Warfarin**.

**2** Write the date for your next **INR** on your calendar.



**3** **INR blood** tests will be done every few days right after you leave the hospital.

After some time, you will not have to get your **INR** tested as often.

**4** **EVERY** time you get an **INR blood** test done, you should receive a call within **1** day from the doctor or nurse who helps you with your **Warfarin**. **If they don't call you, it is very important that you call them back to remind them!!** and let them know that you had your **INR** blood test drawn.



**5** When your doctor or nurse gets your **INR** results, they will tell you what to do with your **dose**.



**6** If you get **sick** with a cold or flu, it is important for you to check your **INR** more often. Call the doctor or nurse who helps you with your **Warfarin** and they will tell you when you should check your **INR**.

**7** Be sure to tell your doctor or nurse who helps you with your **INR** if you **start any new medicines or change the dose of medicines** that you already take.







# INR

## International Normalized Ratio

**INR** is the name of a test that your doctors and nurses use to check to see that your blood thinner is working well. A normal **INR** for someone who is does not take a blood thinner is 0.9-1.2.



When you check your **INR**; it tells us about the **last 5-7 days** of **warfarin** dosing. If you miss a dose, your INR will be low.



You will have a **target** for your **INR**. It will be between 2 numbers.



Your target **INR** range or **therapeutic range** is:

1.5-2.0 ☐

2.0-3.0 ☐

2.5-3.5 ☐

3.0-4.0 ☐



## Information for Parents & Older Kids

- Using **blood thinners** in children is sometimes difficult because children are not the same as adults.
- It is important to check blood often to be sure that the **blood thinner** is working well.
- Taking blood samples from children is difficult because they have small veins that make it difficult to insert a needle to take a small blood sample. As well, many children are afraid of needle pokes. All of this makes managing **blood thinners** in infants and children very hard.
- The **INR** home meter is used to check your blood level so that you know that your **blood thinner** is working well. You can check your blood at home by using a drop of blood from a just a small finger poke.

It is **important** to keep your **INR** between the two numbers of your range.

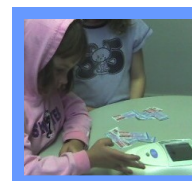
This is called the **INR 'therapeutic range'**.

Your **target range** will be the best one for you.

This will mean it will take this much longer for your blood to clot.

If your INR is below your range you may grow a blood clot

If your INR is above your range it will increase your chance of bleeding





### Be Safe:

- If your **INR is above** your target you have an increased chance of bleeding.
- If your **INR is below** your target, you have an increased chance of developing a clot.
- The major side effect of warfarin is bleeding.
  - Warfarin does not make you bleed but will make any source of bleeding bleed more.
  - If you become pregnant taking warfarin, contact your care provider.

### Slight Bleeding

- Nose bleeds and gum bleeds.
  - If your nose starts bleeding, pinch and hold tightly for 10 minutes without stopping. If still bleeding, pinch and hold for another 10 minutes. If still bleeding, contact your care provider or go to a health clinic or emergency room
  - A soft toothbrush may help decrease bleeding of the gums
- Menstrual bleeding that is heavier than normal is common
- Easy bruising
- Bleeding after a cut that take a little longer to stop
- **Do not stop taking warfarin if you experience minor bleeding.** You may call your care provider if you are worried

### Major Bleeding

- Red, dark or coffee coloured urine
- Red or black bowel movements
- Coughing or vomiting bright red blood or "coffee ground"
- A cut that does not stop after 10 minutes of pressure
- A serious fall or hit to the head
- **If any of these occur go to your local emergency room**

**NO** Contact Sports.



**Be careful not** to bump your head..



**Be sure** to **Wear a helmet** when biking, boarding, skiing etc.

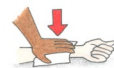


**Alcohol** will make your risk of **bleeding even higher** when you are taking **Warfarin.**

**Do Not Binge Drink**



If you cut yourself, hold the cut tight for **10 minutes.**



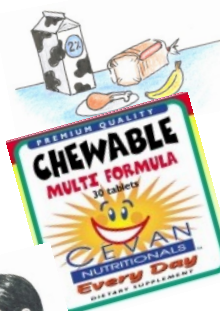
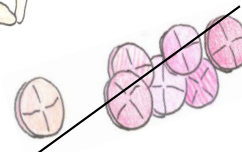
Check your **INR** on the day your doctor or nurses asks you to.





## Important things to remember

- Always wear your Medical Alert bracelet
- If you forget a dose, don't take 2 doses the next day to make up for it
- If you miss a dose, call your doctor or nurse and tell them
- Don't take Aspirin, ibuprofen or other medicines without having your mom or dad check with your doctor or nurse first
- Make sure you eat the same healthy foods you usually do. Your doctor or nurse will fix your Warfarin dose so that it is the right amount for you and the foods you usually eat
- You do not have to take multi-vitamins because you are taking Warfarin but if you choose to take multi-vitamins, it is important that you take them everyday
- If your nose starts to bleed, pinch it tightly and hold it for 10 minutes without letting go. If it still bleeds, hold your nose for 10 more minutes. If it is still bleeding, tell your mom or dad to call your doctor so they can help you
- When you are taking Warfarin you can still have your immunizations. Have the nurse giving you your immunization press firmly on the place where you had your injection for 5 minutes
- If you are having surgery, dental surgery or any procedures that may cause bleeding be sure to tell your doctor or nurse who helps you with your warfarin when your appointment is booked for your procedure. Your Warfarin doctor or nurse will need to change your Warfarin to another blood thinner so that your chance of bleeding isn't high when you have surgery
- Do not take warfarin if you might be pregnant



Take  
away  
message

- Take your warfarin around the same time every day
- Regular blood testing (INR) is important to keep you safe on warfarin
  - \* Checking and reporting the INR is mandatory \*
- Changes in DIME (Diet, Illness, Medications, or Error (missed doses)) decrease the effectiveness and safety of warfarin and will affect your INR.
  - \* Be sure to report DIME with every INR check \*
- It is important to speak with your health provider if the INR is  $<1.6$  or  $>3.7$  before giving the next warfarin dose that day.
- Warfarin will make any source of bleeding worse
- Contact your warfarin care provider if you have ANY medical procedure planned or if you become pregnant on warfarin
- Continue health exercise - but be safe and use common sense in doing so!





## Using the POC INR Meter

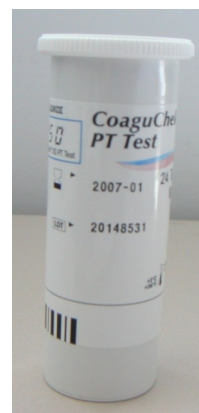
### Coagucheck Test Strips

Use only Coagucheck S test strips

Never use strips beyond the **expiration date** printed on the strip bottle.

Ensure **code chip** and **strip lot number** match.

Do not use strips that are bent, punctured, cut, soiled or damaged in any way.



### Find a place to do your blood test

1

Find a place that is:

Out of the sun.

Flat.

Clean and Dry.



3

Set out the items you will need to check your blood.

Test Strip



2

**Wash  
Your  
Hands**



Lancet / "poking needle"

Meter

Lancing Pen



## Make the lancing PEN ready to use

1

Turn the cap to the right until it comes off.



The Lancing pen is the pen shaped holder that holds the needle (Lancet) that pokes your finger.

2

Push the flat end of the Lancet in the opening until it clicks.



The Lancet is the needle that goes into the pen which pokes your finger.

3

Twist the small round cap off the needle. Take care not to poke



If you push the trigger button by mistake you can simply turn the cap to the right again until it clicks.

4

Put the cap back on by placing it in place and turning to the right.



5

Continue turning the cap to the right until it clicks.



## Now your lancing PEN is ready to use!

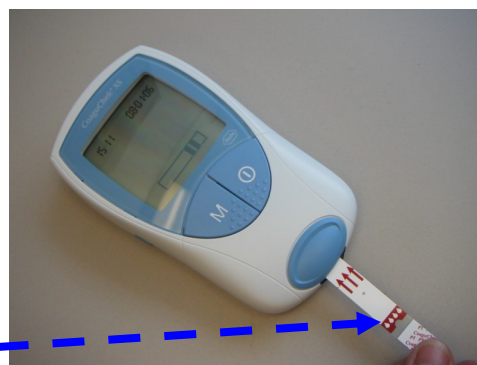
# Doing your INR blood check

1



Turn on the meter  
by pressing the  
**blue (M)** button.

2



When you see the picture of the test strip on the  
meter screen → remove a test strip from the  
bottle and insert it into the monitor **so that the**  
**red letters CoaguChek XS PT are facing up.**  
**Be sure to put the lid back on the test strips**  
**right away.**

3

Watch the monitor display. You will  
see a **code number** appear.

Make sure the **code number** is the  
same as the code number on the  
test strip bottle.



If the **number the on the monitor**  
**screen and the code number on the**  
**test strip** package are the **same**  
**then press the blue 'M' button.**

4

The strip will now be  
warmed to a preset  
temperature.





# Now its time to poke your finger!

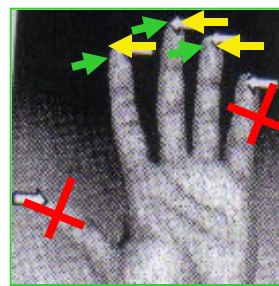
1

Pick which finger you want to poke to get your sample of blood.



2

Press your hand down on the table hard.  
Your fingers will bulge around the sides.



**The best place to poke to get a drop of blood is where they bulge.**

Do not use the pads of your fingers or your "pinky" finger or thumb. They will not bleed as well and may hurt when you poke them.

3

The meter will start to count down from 180. This means that you have 180 seconds or 3 minutes to put the drop of blood on the test strip.

You must apply a drop of blood in this time or a 0000 error message will appear.



4 now

Hold the lancing pen tightly on the finger you have chosen and press down on the button.







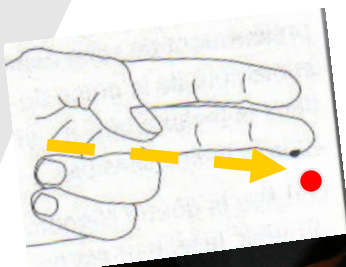
5

**RELAX!** and let go of the hand for a few seconds

6

**Now** your finger will start to bleed!

7



Gently press on the base of your finger and massage up towards the tip of your finger to help to squeeze out a drop of blood.

Do this several times until you have a very big drop that is hanging off your finger like a raindrop.

Allow the blood drop to fall on the "see-through" area of the test strip.

**Well done!!**

If the drop will not fall, gently touch the drop down on the strip



# KIDCLOT



Kids Informed Decrease Complications: Learning on Thrombosis

8



now

Wrap a tissue loosely around your finger.



Do not **STOP** the bleeding until you are sure you have a test result.

9



The results will appear after a few seconds.



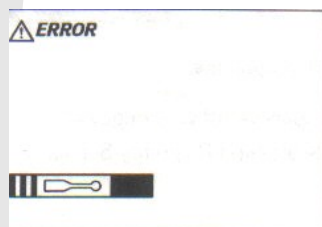
If you get an **ERROR** message you can use the same finger poke to get a new blood drop.

10



You will need to put a new test strip into the monitor.

**"ERROR" ->**  
**Go back to step 2**  
**but...**  
**you can use a new drop of blood from the same finger poke!**





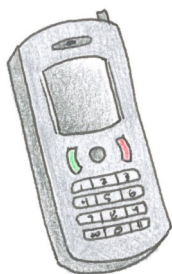
# your INR result ...



Write  
it down.

[illegible]

Call your  
**INR** result  
to your  
doctor or  
nurse.



**Be sure to  
tell your  
doctor or  
nurse  
4 things:**

1. Date
2. Time
3. Warfarin dose
4. INR

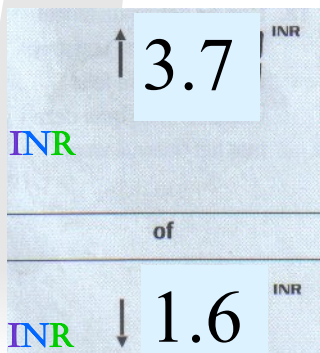


Your doctor or nurse will call you back and tell you what to do with your dose of **Warfarin** and when to check your **INR** the next time.

**but...** If your **INR** is **higher than 5** or **lower than 1.6** call your doctor or nurse. Be sure to speak with them the same day.

It is important that you talk to them **before you take your next warfarin dose.**

You should always receive a call back from your doctor or nurse **within 24 hours**.  
If you didn't get a call back -> be sure to call them again!!







## More about Monitoring and Reporting INR Levels

The doctor or nurse who is in charge of helping you with your **Warfarin** and **INR** checks will call you when they have received the results and will tell you if there are changes in your dose.

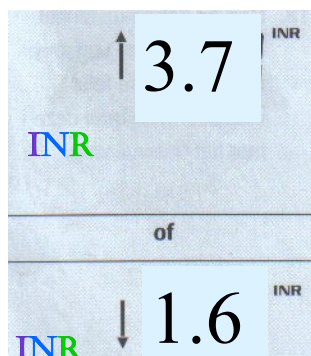
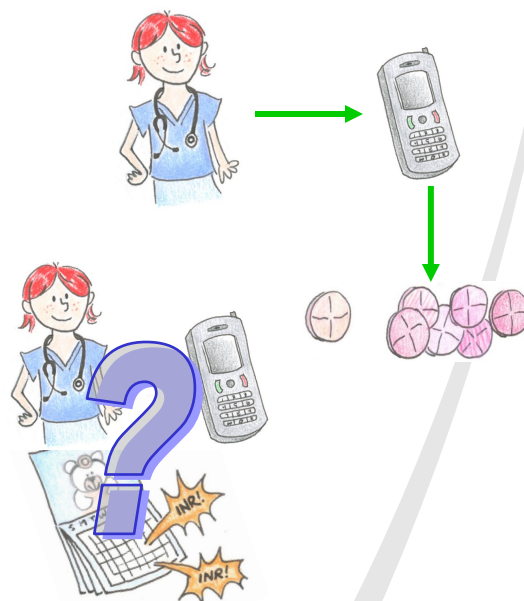
You always should receive a call from the doctor or nurse who is in charge of helping you with your Warfarin and **INR** testing within 1 day.

If you do not receive a call within 1 day please call again.

If the **INR** is  $<1.6$  or  $>3.7$  page the doctor or nurse who is in charge of helping you with your **Warfarin**. Your dose will need to be adjusted immediately.

Sometimes **INR** blood tests will need to be done at the local lab. You will need to go to the lab and have an **INR** blood test and do an **INR** test on the monitor at the same time.

You have a form for blood work to have your **INR** done in the lab at the back of this booklet. This is so that you have it in case you need it in the future.







## Taking Care of Your Meter & Supplies

### Putting your equipment away safely

#### Remove the needle from the lancing pen

Unscrew the cap covering the lancing needle. Hold the lancing device downwards over a firm container and press the ejector button as far as it will go.



- ◆ The needle will fall out of the pen so be sure you have the end over the **“sharps”** container.
- ◆ Ask your drug store for one of these containers. It is called a **“sharps”** container.

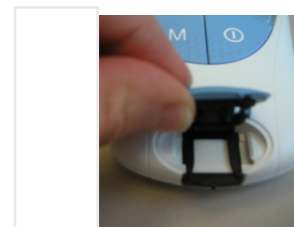
### Keep your meter clean so that it continues to work well

#### To clean the surface of the meter

- Use mild liquid soap and a soft cloth to wipe the surface of the meter to keep it clean.
- Be sure that your cloth is not too wet. **No** water should enter the meter.

#### To clean the strip window of the Coaguchek XS

- It is important to keep this window clean. When it has dirt on it, the meter will not measure your blood correctly.





## ARE YOU READY TO GO HOME?



## Monitoring & Reporting INR Levels

Be sure to check your INR when you are scheduled to do so and call your results to your INR doctor or nurse. This will keep you safe when you are taking Warfarin.

### Remember!

When you check your **INR**; it tells us about the **last 4-5 days** of **warfarin** dosing.

If you missed a dose in the last **4-5 days** call your **INR doctor or nurse** and let them know. They may change the date you should check your blood



- ◆ Your **INR** blood checks may be done every few days after you are first home from hospital.
- ◆ Next your blood checks will be done weekly.
- ◆ Blood **INR** testing will occur less often once the effect of the medicine on your blood becomes stable.
- ◆ You **must call** the doctor or nurse who is in charge of helping you with your **Warfarin** and **INR** testing **each time** an **INR** test is done.
- ◆ Leave a message with your **INR** result.



# ERROR Messages



## Flashing

- ◆ The meter is too hot or too cold.
- ◆ The Battery is too low.
- ◆ The test strip is damaged.

The test strip can not be used.

## 3 or 4

What to do:

- ◆ Try turning the meter off and start again.
- ◆ If the same message appears, use a new test

## 5 or 6 or 7

There is not enough blood drop on the test strip.

What to do:

- ◆ Do the blood test again with a new test strip.

## QC or 8

What to do:

- ◆ Do the blood test again with a new test strip.

If the meter still will not work then →

- ◆ Call the doctor or nurse who help you with your warfarin.



## Are you ready to go home?

How will you  
put your used  
supplies away  
safely?

Why are  
EQC's  
important?

Can you or  
your parents  
do a blood  
check using  
the meter by  
yourself?

Why is the  
code on the  
test strips  
important?



What is your  
INR range?

Why is important  
to perform the  
blood check  
properly?

Why is the expiry  
date on the test  
strips important?

What are the  
dangers of  
taking  
warfarin?

Why are you  
taking  
warfarin?

Who will you  
call with your  
INR?

What will you do  
if you get an error  
message?

What needs to  
be done to  
take care of  
your monitor  
and put away  
the supplies  
you used?

When is it  
important to  
talk to your INR  
doctor or nurse  
the same day?





# KIDCLOT

Alberta Health Services



Kids Informed Decrease Complications: Learning on Thrombosis

## Before you leave the hospital, make sure you have:

**1** Your **meter** and **test strips**



**2** This teaching magazine.



**3** A prescription for **Warfarin / Coumadin** (you will need **2** different **colours** of pills) if your dose is more than 2 mg.



**4** Your **INR** RANGE is: \_\_\_\_\_

**5**



**6**



A **blood test** form for your **INR**.

**7**



Be sure you know when your next blood check is

Your Warfarin dose is: \_\_\_\_\_ mg.

Your next blood check is: \_\_\_\_\_

**8**



Your **INR** doctor or nurse's phone number. \_\_\_\_\_

Remember, your doctor and nurse are **ALWAYS** there to help you if you have a problem!

### HOW TO CONTACT KIDCLOT ©

➤ Hotline (780) 248-5640

Messages will be answered before 4:00pm, business days

➤ After Hours (urgent matters only) (780) 407-8822 (request KIDCLOT provider on call)



## EmPoWARed - Patient Self Management of Warfarin

Patient self testing using a point of care (POC) Home INR meter has greatly improved warfarin management in children. Patient self management (PSM) takes warfarin management a step further where a patient performing home INR self testing takes an active role in managing their warfarin therapy. Warfarinized patients participate in education about warfarin management and dosing. Patients and their families begin an apprenticeship where they learn to self-adjust their warfarin dose using a dosing guide. Patient self-management further improves warfarin management due to increased knowledge and participation in their healthcare. Warfarin self management is preferred by patients, improves health related quality of life, adherence, and results in better patient outcomes.

Once you have been stable and successful on warfarin for a period of time, you will begin warfarin self-management. (See anticoagulation self management questionnaire).





## KIDCLOT Anticoagulation Self Management Readiness Assessment Questionnaire

**Directions to Youth and Young Adults:** Please ✓ the box that best describes your skill level in the following areas that are important for transition to adult health care. There is no right or wrong answer and your answers are kept confidential and private.

**Directions to Caregivers/Parents:** if your youth or young adults is unable to complete the tasks below on their own, please check the box that best describes your skill level

☐ Check here if you are a parent/caregiver completing this form.

*Adapted from TRAQ; Wood et al; April 2015*

	No, I do not	No, but I want to learn	Sometimes, I am learning	Yes
<b>Managing Medications</b>				
1. Do you know why you are taking warfarin?				
2. Do you fill your warfarin prescription if you need to?				
3. Do you know what your dose of warfarin is?				
4. Do you take your warfarin every day?				
5. Do you reorder your medications when they run out?				
6. Do you write warfarin doses each time you check your INR?				
<b>INR testing</b>				
7. Do you know what your target INR range is?				
8. Do you know how often you usually check your INR?				
9. Do you test your INR on the date you have been advised?				
10. Do you keep track and a record of when to test your INR?				
11. Do you know what to do if your INR is high or low?				
12. Do you report your INR to KIDCLOT on your own?				
<b>Appointment Keeping</b>				
13. Do you contact KIDCLOT if you have any questions about your warfarin or need a clinic appointment?				
14. Do you contact KIDCLOT if there are any changes in your health?				
<b>Managing your Health</b>				
15. Do you feel that you understand how to take warfarin?				
16. Do you feel you understand the importance of INR testing?				
17. Would you like to be more independent in managing your warfarin?				
18. Do you know how to contact the KIDCLOT team if you need help?				
19. Do you tell the doctor or nurse what you are feeling?				
20. Do you have a computer with internet access at home?	NO		YES	



## CHANGING YOUR WARFARIN DOSE

## How often to test your / your child's INR and adjust the warfarin dose:

- ◆ Always test an INR 5-7 days after changing your warfarin dose. Use the maintenance guidelines below for making dose changes.
- ◆ Many medications may affect the response to warfarin—if you start or stop or change doses of another medication, test an INR after 4 days.

Deciding when to next test the INR:

## STEPS:

1. INR out of range, warfarin dose adjustment made, recheck in one week.
  2. INR's in range on tests taken 7 days apart, INR testing can be stretched to every 2 weeks
  3. INR stable for 2 tests in a row 2 weeks apart, INR testing can be stretched to every 3 weeks
  4. INR stable for 2 tests in a row 3 weeks apart, INR testing can be stretched to every 4 weeks
- ◆ The INR must be monitored a minimum of once a month
  - ◆ Any time a dose adjustment is required, return to STEP 1
  - ◆ Dose adjustments should be made to the closest 0.25 mg (1/4 of 1 mg)

When determining the need to adjust your warfarin dose, ask yourself the questions in the table. If the answer to any of the questions is "yes" then consider individualized variation from the guideline and be sure to document your reasons in your warfarin diary.

If you are having surgery or a procedure, be sure to inform KIDCLOT as soon as you know the date.

## WARFARIN MAINTENANCE DOSE GUIDELINES:

INR 1.5 – 2.0	INR 2.0 - 3.0	INR 2.5 - 3.5	Diet	Illness	Medication change	Error-missed	Warfarin dose adjustment
	1.0 - 1.4	1.0 - 1.4					Contact the KIDCLOT Service (call locating)
		1.5 - 1.8					↑20%
1.0 - 1.4	1.5 - 1.9	1.9 - 2.5					↑10%
1.5 - 2.4	2.0 – 3.0	2.5 - 3.5					YAHOO! No change
	3.1 – 4.0	3.5 – 4.0					↓10%
2.5 - 3.5	4.1 - 4.9	4.1 - 4.9					Take one dose at 50% less than last dose. Then restart at 10% less than your previous daily dose
3.6 - 4.9	> 5.0	> 5.0					No bleeding.->Hold 1 dose. Contact your KIDCLOT doctor or nurse. Evaluate <b>DIME</b>

If any bleeding contact your warfarin doctor or nurse

If you are within 0.2 of your therapeutic range for the first time, continue the same dose and recheck your INR in one week.





## Warfarin Dose Adjustment Table

Dose	↓	↓ 10%	↓ 20%	50% ↓ x 1	↑	↑ 10%	↑ 20%	50% ↑ x 1
<b>1mg</b>		<b>0.75 mg</b>	<b>0.75 mg</b>	<b>0.5 mg</b>		<b>1.25 mg</b>	<b>1.25 mg</b>	<b>1.5 mg</b>
1.25		1	0.75	0.5		1.5	1.5	2
1.5		1.25	1.25	0.75		1.75	1.75	2.5
1.75		1.5	1.5	1		2	2	3
<b>2 mg</b>		<b>1.75 mg</b>	<b>1.5 mg</b>	<b>1 mg</b>		<b>2.25 mg</b>	<b>2.5 mg</b>	<b>3 mg</b>
2.25		2	1.75	1.25		2.5	2.75	3.5
2.5		2.25	2	1.25		2.75	3	3.5
2.75		2.5	2.25	1.5		3	3.5	4.0
<b>3 mg</b>		<b>2.75 mg</b>	<b>2.5 mg</b>	<b>1.5 mg</b>		<b>3.25 mg</b>	<b>3.5 mg</b>	<b>4.5 mg</b>
3.25		3	2.75	1.75		3.5	4	5
3.5		3.25	2.75	1.75		4	4.5	5
3.75		3.5	3	2		4	4.5	5.5
<b>4 mg</b>		<b>3.5 mg</b>	<b>3.0 mg</b>	<b>2 mg</b>		<b>4.5 mg</b>	<b>5 mg</b>	<b>6 mg</b>
4.5		4	3.5	2.25		5	5.5	7
<b>5 mg</b>		<b>4.5 mg</b>	<b>4 mg</b>	<b>2.5 mg</b>		<b>5.5 mg</b>	<b>6 mg</b>	<b>7.5 mg</b>
5.5		5	4.5	2.75		6	6.5	8
<b>6 mg</b>		<b>5.5 mg</b>	<b>5 mg</b>	<b>3 mg</b>		<b>6.5 mg</b>	<b>7. mg</b>	<b>9 mg</b>
6.5		6	5.5	3.25		7.0	7.5	9
<b>7 mg</b>		<b>6.5.mg</b>	<b>6</b>	<b>3.5 mg</b>		<b>7.5 mg</b>	<b>8 mg</b>	<b>10 mg</b>
7.5		6.75	6	3.75		8.25	9	11
<b>8 mg</b>		<b>7.25 mg</b>	<b>6.5 mg</b>	<b>4 mg</b>		<b>9 mg</b>	<b>9.5 mg</b>	<b>12 mg</b>
8.5		7.5	7	4		9.5	10	12
<b>9 mg</b>		<b>8 mg</b>	<b>7.25 mg</b>	<b>4.5 mg</b>		<b>10 mg</b>	<b>11 mg</b>	<b>14 mg</b>
<b>10 mg</b>		<b>9 mg</b>	<b>8 mg</b>	<b>5 mg</b>		<b>11 mg</b>	<b>12 mg</b>	<b>15 mg</b>
<b>11 mg</b>		<b>10 mg</b>	<b>9 mg</b>	<b>5.5 mg</b>		<b>12 mg</b>	<b>13 mg</b>	<b>16 mg</b>



KIDCLOT

## Kids Informed Decrease Complications: Learning on Thrombosis



**Patient Name:** \_\_\_\_\_

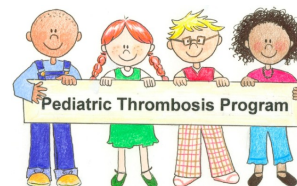
Monitor Serial #: \_\_\_\_\_ Loaner # \_\_\_\_\_

Reason for Anticoagulation

### Therapeutic Range

**Cardiologist** \_\_\_\_\_

Pharmacy # \_\_\_\_\_

[illegible]

