**PST in Practice**

This resource summarises the typical steps that need to be taken in commencing and managing someone in self-testing of oral anticoagulation. It also describes the respective responsibilities of the patient and the clinic in supporting self-testing

**What should happen before the patient buys a coagulometer?**

Before buying a coagulometer patients should be encouraged to do the following:

i) Discuss the idea of self-testing with their anticoagulant clinic. It is not suitable for everyone and as an anticoagulation practitioner you should be able to give them guidance on whether it is likely to be suitable for them. The patient may also wish to involve carers, family members or friends at this stage.

ii) Agree with the patient that the anticoagulant clinic is willing to supervise them self-testing. This may be in the form of a written agreement. The patient’s GP may wish to see this agreement before prescribing test strips.

iii) The patient should check with their GP if they will prescribe the test strips. If the GP is not able to do this, the patient may need to buy the strips. They cost over £2 per test strip.

iv) The patient should read and understand Helicon Health’s patient education material. This is very important, as it will give them the essential understanding of the important aspects of warfarin and monitoring, including the following

**What should happen once the patient has bought their coagulometer?**

Once the patient has their coagulometer, they should arrange an appointment with the clinic. . Roche, the manufacturer of the CoaguChek XS ® machine, provides a DVD with the machine; patients are advised to watch this DVD prior to their first appointment. This DVD explains the different functions of the CoaguChek XS ® and how to perform an INR test.

**The first self-testing visit**

At this visit, you should ask the patient to demonstrate how they measure their INR. You should show the patient how to do an INR test if necessary.

At this visit you should also compare the patient’s INR from a venous sample tested on the laboratory machine with that measured from a capillary sample on the patient’s coagulometer. A variance of up to 0.4 units is acceptable. This is to check that the coagulometer will be an accurate method of measuring the patient’s INR. For example, if a patient has a haematocrit (Hct) level outside the acceptable range for the machine (i.e. outside 25-55%), this may cause higher or lower results, or occasionally no result can be obtained.

Patients and carers should be encouraged to ask any questions that they may have about self-testing.

The patient should then be asked to test and record their INR results at home for a short time period before attending a second appointment. This is for practice and is to get them used to measuring their own INR.

**The second self-testing visit**

At this second visit, you should check that the patient / carer is able to perform an INR test, and that they are comfortable with doing this.

At this visit, you should also go through the following with them:

* The procedure for self-testing, including how they should communicate their INR results to the clinic and when they should seek assistance from you.
* How to accurately record their INR results
* When they should next come to the anticoagulant clinic for a review. It is recommended that those who are self-testing are seen at least once every six months. In addition to giving them the opportunity to discuss any issues with their anticoagulation practitioner, this review also allows you to check that their coagulometer is working correctly by performing a quality assurance (QA) test on it

You will check the accuracy of the patient’s coagulometer by comparing the INR result from this machine with a ‘known value’, which can be one of the following:

1. The INR measured from a venous blood sample which is measured on the hospital laboratory’s machine
2. The INR from a capillary blood sample measured on the clinic’s coagulometer which has undergone it own external quality assurance

**What are the patient’s responsibilities when self-testing?**

Self-testing of oral anticoagulation involves sharing care between the patient and their anticoagulation practitioner. Therefore, it is important that both parties agree on respective responsibilities.

Examples of the patient’s responsibilities are listed in Box A

* Commit to training and education in self-testing
* Perform INR tests at the time agreed with your anticoagulation practitioner
* Inform the anticoagulant clinic of your INR readings
* Inform the anticoagulant clinic of any factors that may have affected the INR (e.g. changes in medication, diet or general health)
* Take the dose of warfarin as agreed with the anticoagulant clinic
* Order supplies of test strips and lancets
* Correctly dispose of strips and lancets
* Maintain your coagulometer
* Attend the anticoagulant clinic for six-monthly review and QA of coagulometer
* Inform the anticoagulant clinic if you decide to stop self-testing or move out of the area

 **Box A: Examples of patient’s responsibilities as a self-tester**

**What are the responsibilities of the anticoagulant clinic?**

Examples of the responsibilities of the anticoagulant clinic are listed in Box B.

* Support educating and training you in self-testing
* Assess if you are able to test your INR
* Be available for help and advice during clinic hours
* Advise you on the dose of warfarin you should take
* Perform quality assurance of your coagulometer at six-monthly review

 **Box B: Examples of the responsibilities of the anticoagulant clinic in supporting you as a self-tester**

**What is the procedure for self-testing?**

You should discuss the procedure for self-testing with the patient. This will include how they should inform you of their INR test result, what they should do if they measure a very high or very low INR, and how they should record their INR result. You should also advise them on how to dispose of their used test strips and lancets.

Below is an example of a clinic procedure for self-testing. Elements of this may vary according to local practice.

1. The person measures their INR using their coagulometer in the morning of the agreed date of the INR test.
2. The person then phones the clinic with their INR reading before 1pm on the same day. If there is not anyone available to take the call they should or leave their name, date of birth, contact number and INR result on the answer machine.
3. The INR tests should not be done on a weekend unless arranged specifically with a member of the anticoagulation team.
4. The person should also report the following to the anticoagulant clinic:
* Bleeding episodes
* Excessive or unexplained bruising
* Change in medication / diet / alcohol intake / herbal remedies
* Missed doses of anticoagulants
* If unwell, diarrhoea or vomiting
* Recent hospital admission
1. The pharmacist/nurse specialist will review the INR on the same day. Dosing advice will be provided in writing, which will be posted first class to the person the same day. This should arrive within 3 working days. The person will be contacted by telephone if there is a dosage change.
2. If the pharmacist/nurse specialist does **not** telephone with dosing advice on the same day, the person should remain on the same dose
3. If the INR is below 1.5 or above 5, the test should be repeated. Both readings should be provided to the anticoagulant clinic.
4. If the INR is below 1.8 and the person has a mechanical heart valve, they should ring the clinic and speak to the anticoagulation practitioner.
5. If INR is above 8, un-recordable and/or the person experiences bleeding episodes they should ring the clinic for advice. A venous sample will be arranged the same day.

 **Example of a procedure for INR self-testing service**

**What questions should you ask a self-testing patient?**

1. What dose of warfain are you taking?
2. Have you missed any tablets in the last two weeks?

 If yes, when and how many doses?

1. Has your doctor started or stopped any medication(including antibiotics) recently?

 If yes, what has been started or stopped and when?

1. Have been feeling unwell in the last 2 weeks i.e. cold, diarrhoea?
2. Have you experienced any worsening in bruising or bleeding in the last two weeks?
3. Have you consumed any more than 2 units of alcohol (1 pint of bitter, or 2 glasses of wine, or 2 pub measures of spirit) in a day in the last 2 weeks?

 If yes, when and how many alcohol drinks did you have?