

Community Pharmacy Safety in Practice (CP-SiP)

Change Package Clinical Module - Anticoagulants 2018-19



Background

A key aim of the Safety in Practice programme is to work with Primary Health Care teams to reduce preventable patient harm from the care they receive. Adverse drug events (ADEs) are major causes of patient morbidity and mortality, and a source of significant costs for both organisations and patients.¹

A recent article from The New Zealand Medical Journal entitled, *Medication-related patient harm in New Zealand hospitals*, warfarin was noted to be in the top 10 list of medicines causing harm, predominantly due to bleeding. Warfarin was attributed to 1.8% of harm documented in this study.¹ When anticoagulants and antiplatelet agents were reviewed together as a class, they were second highest implicated as causing patient harm by severity, with opioids being the highest.¹

Based on exploratory analysis into administrative data for 9,000 local hospital admissions, 9% of all potential ADEs detected were anticoagulant-related.²

This clinical module focuses on the safe use of warfarin, dabigatran and rivaroxaban including:

- Effective patient education
- Ensuring patient understanding of alarm symptoms that need to be reported to a healthcare professional
- Consistent documentation of patient education and interventions to provide evidence of work conducted.

Clinical module aim

By June 2019, all patients prescribed warfarin, dabigatran or rivaroxaban will receive education at time of medicine collection.

Measuring reliability of your care

Pharmacist Scope of Practice

According to The Pharmacy Council of New Zealand, “The practice of pharmacy is necessarily broad and is wider than pharmacists working directly with patients, given that such roles influence clinical practice and public safety. In a clinical role, the pharmacist acts as a medicines manager, providing patient-centered medication therapy management, health improvement and disease prevention services, usually in a collaborative environment. Pharmacists ensure safe and quality use of medicines and optimise health outcomes by contributing to patient assessment and to the selection, prescribing, monitoring and evaluation of medicine therapy”.³

Good medicines management and patient education are core responsibilities of pharmacy practice. In conjunction with a Pharmacy Expert Group, we have developed process and patient outcome measures that we believe represent best practice for warfarin, dabigatran and rivaroxaban management and education, in a succinct manner.

These measures indicate expectations of best practice for ‘every patient, every time’, for those taking warfarin, dabigatran or rivaroxaban.

It is best practice to document all interventions and recommendations made to evidence work that has been carried out. This is one way pharmacists can show all the work that they do, in line with Pharmacy Council of New Zealand Competence Standard O1.4.7. Therefore, the process measures relate to documented evidence that the best practice activities have been performed.

“Competence Standard O1.4.7

Supports and provides continuity of care with accurate and timely documentation of clinical and professional interventions and recommendations, using agreed handover protocols.”

Process and patient outcome measures

The process measures assess whether there is documented evidence of the activity taking place. This information needs to be recorded in the patient file (Toniq or RxOne).

The patient outcome measures assess whether the patient has understood and can recall correctly the information provided.

To assess your processes, we require data from a random sample of 10 patients each month. We do not require NHI or patient identifiable data so please ensure it is anonymous.

- *Please see Table 1 for further guidance regarding these measures*
- *These questions relate to the patient or carer as appropriate*
- *The target population for data collection is patients aged 18 years and over*
- *Medicine refers to either warfarin, dabigatran or rivaroxaban*

Part 1: Process measures (Every patient, every time)

1. Is there evidence the patient was informed how to take their medicine?
2. Is there evidence the patient was informed what to do if they miss a dose?
3. Is there evidence the patient was informed about possible side effects?
3b. If yes, is there evidence they were informed what to do if they get a side effect?
4. Is there evidence the patient was informed about interactions with other medicines (prescription, OTC and complementary), supplements and/or food and alcohol?
5. Is there evidence the patient was offered written information about their medicine?

Part 2: Outcome measures (for 10 random patients)

6. Was the patient able to correctly describe (dose and frequency) how to take their medicine?
7. Was the patient able to describe what to do if they missed a dose?
8. Was the patient able to identify a possible side effect of their medicine?
9. Was the patient able to identify who to ask for help with their medicines?

Table 1: Measures and rationale

Please note: these questions relate to the patient or carer as applicable.

Medicine refers to warfarin, dabigatran or rivaroxaban

#	Measure	Rationale
1.	<p>Is there evidence the patient was informed how to use their medicine?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>There is good evidence that improved patient knowledge and understanding of the use of warfarin improves anticoagulation control.^{4,5}</p> <p>Non-adherence of anticoagulant medicines appears more prevalent among those less well informed about their condition and medicines. The proportion of adherent patients is higher when they receive appropriate education and monitoring.⁶</p>
2.	<p>Is there evidence the patient was informed what to do if they miss a dose?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Warfarin information:</p> <p>If you forget to take a dose, take the missed dose if you remember on the same day. If not, skip the dose and carry on as normal. Do not take two doses of warfarin on the same day.</p> <p>Record your missed dose in your anticoagulant booklet and tell your doctor on your next visit.</p> <p>www.healthnavigator.org.nz/medicines/w/warfarin/</p> <p>Dabigatran information:</p> <p>If you forget to take a dose, and your next dose is due in less than 6 hours, skip the missed dose and take your next dose as normal. If there are more than 6 hours until your next dose, take the missed dose as soon as you remember.</p> <p>DO NOT take double the dose of dabigatran - this increase your risk of bleeding.</p> <p>www.healthnavigator.org.nz/medicines/d/dabigatran/ www.saferx.co.nz/dabigatran-patient-guide.pdf</p> <p>Rivaroxaban information:</p> <p>If you're taking rivaroxaban ONCE A DAY</p> <p>If you miss a dose, take it as soon as you remember on the same day. Do not take double the dose – this increases your risk of bleeding.</p> <p>If you're taking rivaroxaban 15 mg TWO times A DAY</p> <p>If you forget to take a dose you can take two 15 mg tablets at the same time to get a total dose of 30 mg in one day. Continue your regular dose, morning and evening, the next day.</p> <p>www.healthnavigator.org.nz/media/5057/rivaroxaban-factsheet-july-2018-final.pdf www.saferx.co.nz/rivaroxaban.pdf www.healthnavigator.org.nz/medicines/r/rivaroxaban/</p>

<p>3. a</p>	<p>Is there evidence the patient was informed about possible side effects?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>With warfarin, bleeding can still occur when the INR is between 2 and 3, but is more likely with higher INRs.</p> <p>Note: Some medicines and supplements can increase bleeding risk without increasing INR. Illness can also affect INR, and an adjustment in warfarin dosing may be required for patients who develop diarrhoea, fever, heart failure, hyper or hypothyroidism or liver disease.</p>
<p>b</p>	<p>If yes, is there evidence they were informed what to do if they get a side effect?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>N/A <input type="checkbox"/> (They were not informed about possible side effects)</p>	<p>Tell patients about the following symptoms to report immediately to a health care professional if they are taking warfarin, dabigatran or rivaroxaban. These could indicate over anti-coagulation:</p> <ul style="list-style-type: none"> • Red or brown urine • Red or black stools • Severe headache • Unusual weakness • Excessive menstrual bleeding • Prolonged bleeding from gums or nose • Dizziness, trouble breathing or chest pain • Unusual pain, swelling or bruising • Dark, purplish or mottled fingers or toes • Vomiting or coughing up blood <p>Important: Refer any patient with symptoms of bleeding to their GP or directly to A&E.</p> <p>Symptoms of under anti-coagulation (ie from non-compliance, or a dose that is too low) can also signal a life threatening situation:</p> <ul style="list-style-type: none"> • Bluish toes or fingers • Chest pain or severe back pain • Blurred vision • Symptoms of DVT

<p>4.</p>	<p>Is there evidence the patient was informed about interactions with other medicines (prescription, OTC and complementary), supplements and/or food and alcohol?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Inform them about other medicines and products that can interact with oral anticoagulants and increase the bleeding risk, these include SSRIs, aspirin and NSAIDs. Refer to the New Zealand Formulary for a complete list. www.nzf.org.nz</p> <p>Warfarin</p> <p>For patients taking warfarin, advise them to check with their doctor or pharmacist before making major dietary changes, before starting or stopping any other medicines especially antibiotics, OTC, herbal, or complementary medicines. A consistent and balanced diet is recommended to maintain a stable INR. Excessive alcohol or large quantities of cranberry-based products can increase the risk of bleeding. Supplements including fish oil, ginkgo, garlic and ginger can also interact with warfarin.</p> <p>Refer to Auckland Regional Health Pathways information the warfarin red book, the Waitemata DHB warfarin counselling checklist and interactions list (see reference section), and the resources on www.saferx.co.nz and www.healthnavigator.org.nz</p> <p>Dabigatran</p> <p>The combination of amiodarone or verapamil with dabigatran increases the amount of dabigatran absorbed, increasing the risk of bleeding.</p> <p>Rivaroxaban</p> <p>Medicines that can increase rivaroxaban plasma concentrations include itraconazole and ritonavir. The anticoagulant effect of rivaroxaban may be decreased by St John's Wort and some anticonvulsants including phenytoin and carbamazepine.</p>
-----------	---	--

5.	<p>Is there evidence the patient was offered written information about their medicine?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>“Offered written information” means: The patient/carer has been actively asked if they would like to receive written information.</p> <p>Examples of patient information:</p> <p>Warfarin</p> <ul style="list-style-type: none"> • Patient-held anticoagulation record ‘Red Books’ are free via Medidata. These have patient information about warfarin and space to document INR levels and dose. Encourage patients to take them to appointments. <p>Contact Medidata on 09 488 4271 or email gmouldey@medidata.co.nz with the name of your pharmacy, your delivery address and the number of ‘Red Books’ you require.</p> <ul style="list-style-type: none"> • SafeRx® warfarin guides available in English, Chinese, Tongan, Samoan, Niuean, Korean www.saferx.co.nz/patient-guides • Health Navigator www.healthnavigator.org.nz/medicines/w/warfarin/ <p>Dabigatran</p> <ul style="list-style-type: none"> • SafeRx® dabigatran patient guide www.saferx.co.nz/dabigatran-patient-guide.pdf <p>Rivaroxaban</p> <ul style="list-style-type: none"> • PHARMAC and Health Navigator leaflet www.healthnavigator.org.nz/media/5057/rivaroxaban-factsheet-july-2018-final.pdf
----	---	---

Outcome Measures

For this section, you need to check the patient or carer's understanding eg via follow up phone call to the 10 random patients selected for audit. Remember to use open questions to hear the answers from the patient.

If you are unable to locate one of the 10 sample patients, note this in the data collection spreadsheet.

6.	<p>Was the patient able to correctly describe (dose and frequency) how to take their medicine?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p><i>'Tell me, how do you usually take your warfarin/dabigatran/rivaroxaban?'</i></p> <p>Answer guidance - warfarin:</p> <ul style="list-style-type: none"> • Yes – if the patient knows to take it once daily, ideally at the same time each day. • No – if they couldn't explain how to take warfarin <p>Answer guidance - dabigatran:</p> <ul style="list-style-type: none"> • Yes – if the patient knows to take it twice daily (for AF), or once daily for VTE prevention, ideally at the same time each day. • No – if they couldn't explain how to take dabigatran <p>Answer guidance – rivaroxaban:</p> <ul style="list-style-type: none"> • Yes – if the patient knows to take it once daily for AF, or to prevent clots post-operatively. If they are taking it to treat blood clots, they will need to take it twice daily for 3 weeks, then once daily. • No – if they couldn't explain how to take rivaroxaban
7.	<p>Was the patient able to describe what to do if they missed a dose?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p><i>'Tell me, what would you do if you forgot to take your warfarin/dabigatran/rivaroxaban?'</i></p> <p>Answer guidance – warfarin</p> <ul style="list-style-type: none"> • Yes – if they know to take it if they remember the same day, but to skip it if they've missed the dose that day. Remind them to record any missed doses in their book. • No – if they couldn't appropriately explain what to do if they missed a dose. <p>Answer guidance – dabigatran</p> <ul style="list-style-type: none"> • Yes – if they know to skip the missed dose if their next dose is due in less than 6 hours. If it is due in 6 hours or more, take it as soon as they remember. • No – if they couldn't appropriately explain what to do if they missed a dose. <p>Answer guidance – rivaroxaban once a day:</p> <ul style="list-style-type: none"> • Yes if they know to take it as soon as they remember on the same day, not to take double the dose that day. <p>Answer guidance – rivaroxaban 15mg twice a day:</p> <ul style="list-style-type: none"> • Yes – if they know they can take it if they remember that day (up to 30mg in one day), then continue as usual the next day. • No – if they couldn't appropriately explain what to do if they missed a dose.

8.	<p>Was the patient able to identify a possible side effect of their medicine?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p><i>‘Do you know any side effects that might happen?’</i></p> <p>This is to find out if the education provided was effective. Refer to Question 3 above.</p> <p>Answer guidance:</p> <ul style="list-style-type: none"> • Yes - if they could identify a possible side effect • No - if they couldn't name any side effects
9.	<p>Was the patient able to identify who to ask for help with their medicines?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p><i>‘Who would you ask for help if you are worried about your medicines or side effects?’</i></p> <p>Appropriate answers may include examples such as Pharmacist, Pharmacy staff, Doctor, Nurse, hospital staff.</p> <p>Answer guidance:</p> <ul style="list-style-type: none"> • Yes - if they could identify an appropriate person to ask for help • No - if they couldn't name anyone or if information was unclear

Randomising patients

For sample sizes up to 10

Audit all 10 patients.

For sample sizes of 11 - 28

1. Select a random number between 1 and 10 by picking pieces of paper out of a hat.
2. If you select an odd number audit every other patient starting at 1 e.g. 1st, 3rd, 5th, 7th etc. If you select an even number audit every other patient starting with the second patient eg 2nd, 4th, 6th, 8th etc.

For sample sizes 29+

1. Select a random number between 1 and 10 by picking pieces of paper out of a hat.
2. Audit every other patient starting at this number eg if 6 is drawn audit the 6th, 8th, 10th patient etc.

Data collection and submission

In order to assess your processes for warfarin, dabigatran and rivaroxaban management and education, you will need to collect data from 10 random patients dispensed these medicine every month. As a team, you will then reflect on your results monthly and look for opportunities for improvement.

Note: We DO NOT require NHI or patient identifiable data, so please ensure it is anonymous.

1. When you receive a script for warfarin, dabigatran or rivaroxaban, go through the Process Measures for *"Every patient, every time"*.
2. Document the information in the patient file eg in Toniq as an intervention or in RxOne as an event audit so it can be found easily.

3. Data collection - at the end of the month:
 - a. Run a report on Toniq or RxOne for all warfarin, dabigatran or rivaroxaban dispensed during the month.
 - b. From the report, randomly select 10 patients.
 - c. For the 10 patients, review their patient file for **documented** evidence that the Process Measures occurred. Record this on the spreadsheet.
 - d. Contact the 10 patients and go through the Outcome Measures with them - record results on spreadsheet.
 - e. Submit spreadsheet to audit@safetyinpractice.co.nz by the 10th of every month.

4. Discuss results with your team each month and look for opportunities for improvement (Change Ideas).
5. Test Change Ideas using Plan-Do-Study-Act (PDSA) cycles. Enter your PDSAs into the PDSA template in the spreadsheet (tab 6) to keep a record of changes that you have tried, and also update the PDSA log (tab 7).
6. Repeat the above processes every month.

- Refer to the Toniq or RxOne screenshots for more guidance on selecting patients.
- Documented evidence is required for compliance to Process Measures - please tick 'No' on the spreadsheet if the information has not been documented in the patient file.
- Outcome measures require patient follow-up eg by phone call or when they return to the pharmacy. If you are unable to locate a patient phone number for one of the 10 sample patients, please note this in the data collection spreadsheet.

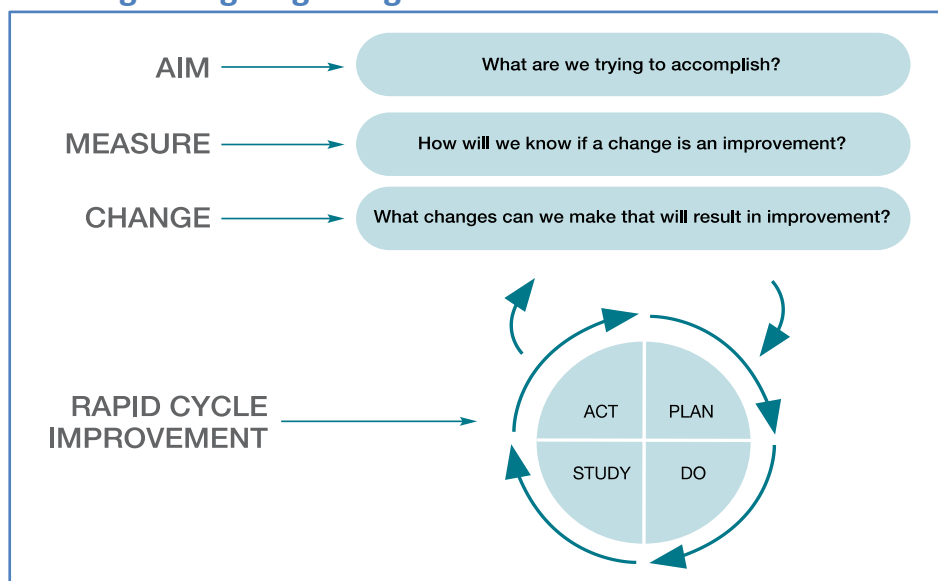
Please note: we expect low scores for the baseline August 2018 data, where interventions occurred prior to the Safety in Practice programme beginning, so do not worry.

Getting your team ready for Safety in Practice

Points to consider

- Read through this document so you are familiar with the content
- Identify responsible leads to drive the programme in your pharmacy
- Organise a staff meeting to talk about Safety in Practice and what is involved
- Develop a process or an SOP document for locums and new staff
- Decide on which patient resources your team would prefer to use and make sure they are readily available
- Decide how you will document any interventions and discussions with prescribers
- Decide how to document patient education on the patient file
- Discuss how to select the 10 patients per month for data collection (Refer to the Toniq and RxOne screen shots in the appendix for more details)
- Decide who will be responsible for completing the data collection sheet and submitting data
- Engage with your GPs regarding the CP SiP programme and discuss anticoagulant prescribing and the resources you will be using
- Display posters in the pharmacy so patients are aware that you are a 'Safety in Practice' pharmacy

Creating change – getting started



Before you start your plan phase:

- Bring together your team – these people will work with you to plan and carry out the test of change
- Select the process you wish to change

As a team answer the 3 questions above:

1. What are we trying to accomplish? (write an objective for this PDSA cycle)
2. How will we know if a change is an improvement?
3. What changes can we make that will result in improvement?

Plan stage

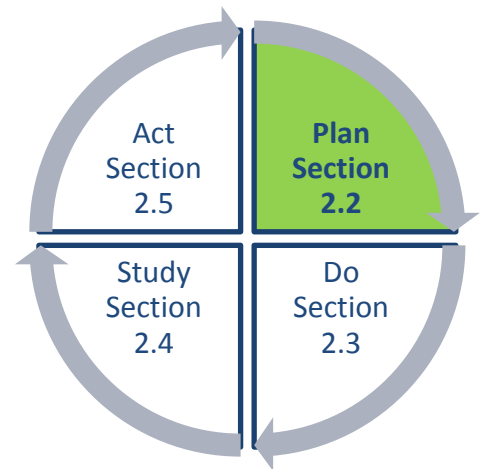
Plan how the changes will happen – ask yourselves and write down the following:

- What will we do?
- Who will carry out the plan?
- When will it take place?
- Where will it happen?
- What data and information will we collect ie what will help us determine if the change is an improvement?
- Do we need training or materials?

Make predictions –what do you think will happen when you test the change and why?

Ask yourself:

- What do we hope to learn by testing the change?
- What will happen when we test the change?
- How will the change be carried out?



Change Idea examples

General	<ul style="list-style-type: none"> • Discuss results of baseline data collection at a team meeting and include SiP as a regular agenda item at team meetings • Arrange education session for pharmacy team about anticoagulants and patient education
Clinical processes	<ul style="list-style-type: none"> • As a team, identify barriers that will prevent you from providing education to patients and look for ways of addressing them
Documentation	<ul style="list-style-type: none"> • See Toniq and RxOne screen shots for examples of measures templates
Discussion with patient	<ul style="list-style-type: none"> • Create prompt card for education points • Optimise use of Self Care Cards • Utilise SafeRx® patient information leaflets • Arrange education session for pharmacy team about atrial fibrillation and thrombosis • Provide information to patients/carers about their reason for being on an oral anticoagulant eg information about atrial fibrillation, or thrombosis. See www.healthnavigator.org.nz for resources

Previous teams' experiences

Benefits

- Confidence within the team that patient education is taking place
- Good conversations with patients
- Improved concordance and understanding of medication
- Good staff buy in to process.

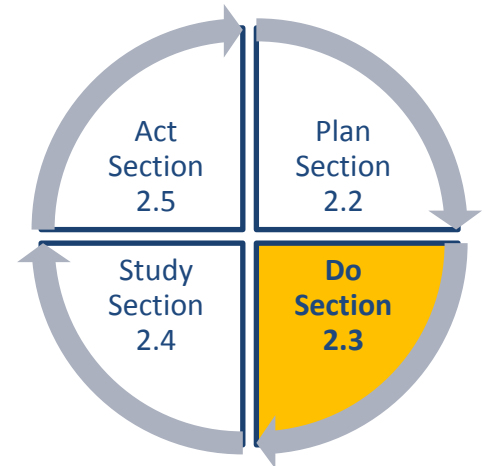
Challenges

- Time commitment required – no easier way out
- Frequent reinforcement needed to effect change
- Took time to effect change
- Contacting patients afterwards and thinking about how to best approach the conversation.

Some pharmacies found a scripted conversation useful for when they had to call patients e.g. *"We are trying to improve the service we provide to our patients. You received a (x) prescription from us this month, is it ok if we asked you 3 questions about this? It should only take 2 minutes"*.

Do

- Prepare to test; gather resources
- Try out your change idea – it is usually best to try it out on a small sample or area of your practice. Starting on a small scale might mean 1 or 2 patients – that way if it doesn't work it is easier to remove the step or process
- While you are testing keep track of what happens in real time – don't wait to write it up



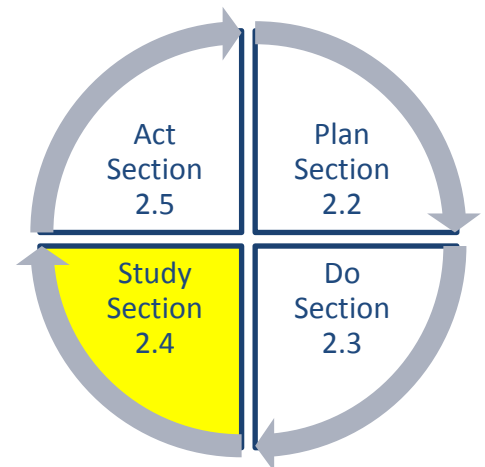
Study

Complete the analysis of the data.

Ask yourself:

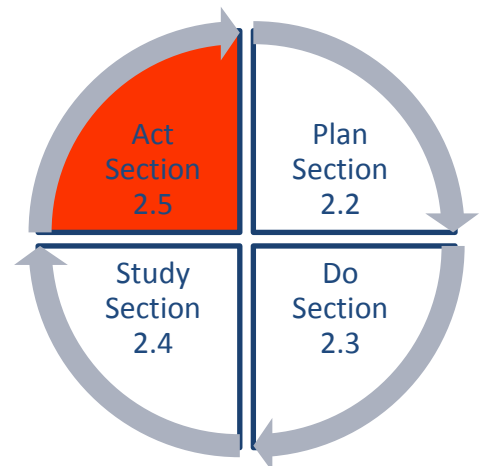
- What has changed?
- Who was affected?
- Are the effects positive or negative?
- Are they worth keeping or removing, adapting or developing?

Compare the data to your predictions.



Act

- Summarise and reflect on what was learned.
- Refine the change based on what was learned.
- Are you going to adopt the change, adapt and retest, or abandon?
- Prepare a plan for your next PDSA cycle – back to the Plan step for your next cycle!



Contacts

- Questions, feedback or general enquiries: info@safetyinpractice.co.nz
- Submitting data: audit@safetyinpractice.co.nz
- Website: www.safetyinpractice.co.nz
- Meet our team: <http://aucklandnc.safetyinpractice.co.nz/our-programme/meet-the-team/>

Resources

General

- Health Pathways information about Atrial Fibrillation (includes patient information) <https://aucklandregion.healthpathways.org.nz/index.htm?18972.htm>
- BPAC article: An update on antithrombotic medicines www.bpac.org.nz/BPJ/2015/April/antithrombotic.aspx
- BPAC article: The safe and effective use of dabigatran and warfarin in primary care www.bpac.org.nz/2017/anticoagulants.aspx

Warfarin

- Pharmac Online Resources – <http://www.pharmaonline.co.nz>. "Starting on Warfarin" leaflet and DVD.
- Health Pathways information <https://aucklandregion.healthpathways.org.nz/index.htm?18972.htm>
- Waitemata DHB – Warfarin Counselling Checklist and List of Interactions <https://aucklandregion.healthpathways.org.nz/Resources/PWarfarin-CounsellingChecklistListofInteractionsMay13.pdf>
- BPAC Guidelines: INR for Monitoring Warfarin Treatment www.bpac.org.nz/BT/2010/November/inr.aspx
- New Zealand Formulary: Warfarin www.nzf.org.nz/nzf/1493
- SafeRx® leaflets. "Warfarin: What you need to know" leaflets are available at www.saferx.co.nz in [English](#), [Chinese](#), [Korean](#), [Niuean](#), [Samoan](#), and [Tongan](#)
- Anticoagulant Treatment Booklet "Red Book" – available free from Medidata on 09 488 4271 or email gmoulden@medidata.co.nz with the name of your pharmacy, your address and number you require.
- Health navigator www.healthnavigator.org.nz/medicines/w/warfarin/

Dabigatran

- Health Pathways information <https://aucklandregion.healthpathways.org.nz/index.htm?18972.htm>
- New Zealand Formulary: Dabigatran www.nzf.org.nz/nzf/1504
- SafeRx® bulletin www.saferx.co.nz/dabigatran.pdf
- Safe Rx® patient guide www.saferx.co.nz/dabigatran-patient-guide.pdf
- Health Navigator www.healthnavigator.org.nz/medicines/d/dabigatran/
- App to manage patients taking dabigatran and rivaroxaban <https://itunes.apple.com/nz/developer/healthhobs-ltd/id498413740>

Rivaroxaban

- New Zealand Formulary: Rivaroxaban <https://nzf.org.nz/nzf/1508>
- SafeRx® bulletin www.saferx.co.nz/rivaroxaban.pdf
- Health Navigator www.healthnavigator.org.nz/medicines/r/rivaroxaban/
- Pharmac information: <https://www.pharmac.govt.nz/medicines/my-medicine-has-changed/rivaroxaban/>
- BPAC article: Rivaroxaban, a fully subsidised anticoagulant medicine <https://bpac.org.nz/2018/rivaroxaban.aspx>
- App to manage patients taking dabigatran and rivaroxaban <https://itunes.apple.com/nz/developer/healthhobs-ltd/id498413740>

References

1. Robb, G, Loe E, Maharaj A et al. Medication-related patient harm in New Zealand hospitals. New Zealand Medical Journal 2017;130(1460):21-32 www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2017/vol-130-no-1460-11-august-2017/7328 (Accessed 17-08-18)
2. Ng, J (2017), Personal communication: Potential Adverse Drug Events identified from administrative data. Auckland, Institute for Improvement and Innovation, Waitemata District Health Board.
3. Pharmacy Council of New Zealand. Scope of Practice. <http://www.pharmacycouncil.org.nz/Pharmacists-wanting-to-register-in-New-Zealand/Qualifications-and-training/Scopes-of-Practice> (Accessed 17-08-18)
4. Tang EO, Lai CS, Lee KK, Wong RS, Cheng G, Chan TY. Relationship between patients' warfarin knowledge and anticoagulation control. Ann Pharmacother. 2003 Jan; 37(1):34-9.
5. Nochowitz B, Shapiro NL, Nutescu EA, Cavallari LH. A structured teaching and self-management program for patients receiving oral anticoagulation: a randomized controlled trial. Working Group for the Study of Patient Self-Management of Oral Anticoagulation. Ann Pharmacother. 2009 Jul; 43(7):1165-72. Epub 2009 Jun 23.
6. Raparelli V, Proietti M, Cangemi R et al. Adherence to oral anticoagulant therapy in patients with atrial fibrillation. Thrombosis and Haemostasis 2017;2:209-18.

Appendix 1: Measures template

Feel free to adapt for use in your pharmacy

Community pharmacy Safety in Practice – anticoagulant checklist

Patient NHI/Name	Date
------------------	------

Patient Education

1. Is there evidence the patient was informed how to use their medicine?

Yes ☐ No ☐

2. Is there evidence the patient was informed what to do if they miss a dose?

Yes ☐ No ☐

3. a) Is there evidence the patient was informed about possible side effects?

Yes ☐ No ☐

Symptoms of over-anticoagulation (e.g. excessive bruising, epistaxis, bleeding gums, severe headache, haematuria, haemoptysis, melena, excessive menstrual bleeding, etc)

Symptoms of under-anticoagulation (bluish toes/fingers, chest/severe back pain, blurred vision or symptoms of DVT etc) may signal a life threatening situation.

b) If yes, is there evidence they were informed what to do if they get a side effect?

Yes ☐ No ☐ N/A ☐

Important: Refer any patient with any presenting symptom(s) to their GP or directly to A&E; especially bleeding or unexplained bruising.

4. Is there evidence the patient was informed about interactions with other medicines (prescription, OTC and complementary), supplements, and/or food and alcohol?

Yes ☐ No ☐

5. Is there evidence the patient was offered written information about their medicine?

Yes ☐ No ☐

Questions 6 – 10 are patient questions to assess patient outcomes with the 10 random patients selected.

6. Was the patient able to correctly describe (dose/frequency) how to take their medicine?

Yes ☐ No ☐

7. Was the patient able to describe what to do if they missed a dose?

Yes ☐ No ☐

8. Was the patient able to identify a possible side effect of their medicine?

Yes ☐ No ☐

9. Was the patient able to identify who to ask for help with their medicines?

Yes ☐ No ☐

Outcome measures

Appendix 3

To search for patients dispensed oral anticoagulants in Toniq:

Go to 'Prescription Reports'

ESC	F1 Help	(RH) Menu	6054	Tue 12/09/2017 12:48pm	TONIQ	WIN
Staff	Toniq Library	Green Papers	Help Desk		Diary Tasks	About
F2	F3	F4	F5		F9	F10

Prescription reports

1. Repeats due
2. Prescription details
3. Owings
4. IMMP
5. Special authority expiry
6. Prescriptions held on file
7. A4 prescription summary

Staff Tasks

	Late	Today	<5 days
	1	0	2
	1	0	0

Choose search criteria e.g. 'oral anticoagulants'

ESC	F1 Help	(RH) Select Prescription details	6054	Tue 12/09/2017 12:48pm	TONIQ	WIN
	Add		Show Hidden			
	F3		F7			

Enter search criteria and/or press ENTER for a list of prescription details

Type in therapeutic group to search for

ESC	F1 Help	(RH) Select Prescription details	6054	Tue 12/09/2017 12:49pm	TONIQ	WIN
	Add		Show Hidden			
	F3		F7			

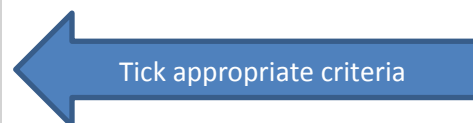
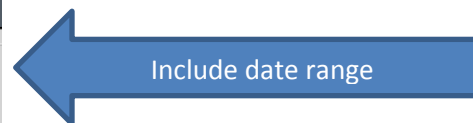
Criteria Name

oral anticoagu

oral anticoagulants

Enter search criteria and/or press ENTER for a list of prescription details

ESC	F1 Help	(RH) Edit Prescription details Pg1	6054	Tue 12/09/2017 12:51pm	TORUQ	WIN
	Date Range			No Pat. Details	Other	Next Page
	F3			F8	F10	F11
Prescription details report options Report name: oral anticoagulants Start date: 01/08/17 00:00 End date: 31/08/17 23:59 Select medicine: _____ Medicine notes: _____ Select mixture: _____ Patient age: From _____ To _____ At Rx date: <input type="checkbox"/> Select prescriber: _____ Professional group: _____ Select patient: _____ Patient notes: _____ Institution: _____ Patient address: _____ Institution group: _____ Exclude: <input type="checkbox"/> Dispensing staff: _____ Rx codes: _____ Excl. Rx codes: _____ Rx notes: _____ Medicine class: _____ Excl. class: _____ Hospital Category: _____ Any Rx note: <input type="checkbox"/> Stock points: _____ Therapeutic group: Blood and Blood Forming Organs/Antithrombotic Agents/Oral Anticoagulants Patient condition: _____ Entry Date: / / Show patient name: <input checked="" type="checkbox"/> Reverse Order: <input type="checkbox"/> Include Prices: <input type="checkbox"/> Include dispensing staff: <input type="checkbox"/> Include New Rxs: <input checked="" type="checkbox"/> Show patient address: <input checked="" type="checkbox"/> Include Rx Notes/comment: <input type="checkbox"/> Show Rx repository details: <input type="checkbox"/> Include Repeats: <input checked="" type="checkbox"/> Show NHI number: <input checked="" type="checkbox"/> Include dose/freq/contract: <input checked="" type="checkbox"/> Outstanding Tel. Rxs Only: <input type="checkbox"/> Patient Name order: <input type="checkbox"/> Show patient phone no.: <input checked="" type="checkbox"/> Include prescriber details: <input type="checkbox"/> Outstanding Fax Rxs Only: <input type="checkbox"/> Medicine order: <input type="checkbox"/> Show patient birth date: <input checked="" type="checkbox"/> Show spec rec details: <input type="checkbox"/> Outstanding Ref. Rxs Only: <input type="checkbox"/> Rx number order: <input checked="" type="checkbox"/> Include Directions: <input checked="" type="checkbox"/> Show E script source details: <input type="checkbox"/> Disp Freq Trial only: <input type="checkbox"/>						
Enter the name for the report criteria.						




Enter F12 to accept details

ESC	F1 Help	(RH) Print	6054	Tue 12/09/2017 12:52pm	TORUQ	WIN
		Pdf File	Csv File	File	View Scrns	View Pages
		F4	F5	F7	F9	F10
Report Prescription details Title: Prescription details report Printer Type: _____ Name: _____ Font: _____ Left: 0 Top: 0 Width: 0 Height: 0 File Name: C:\Toniq Users\Reports\Report.txt Append: <input type="checkbox"/> Csv Name: C:\Toniq Users\Exports\Export.csv Pdf Name: C:\Toniq Users\Pdfs\Report.pdf Status 0%						



[illegible]

ESC	F1 Help	(RUI) Print Preview				6054		Tue 12/09/2017 12:55pm		TONIQ		WIN
Zoom Height	Zoom Width	Zoom 100%	Other	First Page	Prev Page	Next Page	Last Page	Print Range	Print Page	Print All		
F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12		

12 Sep 2017 12:54pm Page

During the course of this programme, if any interventions are made, include them here so everyone can see what has happened. If you have another method of recording interventions, you can use this, so long as everyone in the pharmacy knows where to document and look for interventions.

ESC	F1 Help	(RH) Add Intervention Pg1	6054	Tue 12/09/2017 01:02pm	TORUQ	WIN
Edit Note	Change Date	Goto Time	Reason Code	Action Code	Outcome Code	Print
F2	F3	F4	F6	F7	F8	F9
Intervention Description: Intervention Importance: Improve drug therapy Status: In progress Time taken: minutes Date/Time: 12/09/17 13:01						
Link to <input type="checkbox"/> Rx Patient <input checked="" type="checkbox"/> Prescriber <input type="checkbox"/> Medicine <input type="checkbox"/>						
Script med:						
Reasons: Patient concern/question		Actions: Patient history reviewed		Outcomes: Patient educated/counselled		

Enter the total time take so far in minutes.

ESC	F1 Help	(RH) New Rx	6054	Tue 12/09/2017 01:43pm	TORUQ	WIN
Edit Patient	LTC/ Services	Ph/Fax Refer	Use History	Dose Pack	Supply Option	Use Log
F2	F3	F4	F5	F6	F7	F8
Patient/ Rx	Select option S Patient Services L LTC Details C Conditions P CCMS Portal O Open Patient Diary T Task U Use Diary Template 1 QuickNote - Face To Face Meeting 2 QuickNote - Phone Call - Spoke to Patient 3 QuickNote - Phone Call - Unavailable 4 QuickNote - Hospital Visit 5 QuickNote - Reconciled medicines 6 QuickNote - Synchronised medicines 7 QuickNote - Returned medicines 8 QuickNote - Delivered medicines 9 QuickNote - Contact prescriber 0 QuickNote - Other					contract LTC score 21 = A10, L6, O5 taking medicines but picking up more than 80% active impairment, LTC PF: unstable health status and/or Depression or Chronic Obstructive Pulmonary disease more
Rx code						
Prescribe						
Medicine						
Quantity						
Repeat						
Directions						
Rx Notes						
						/3 Not paid in claim so ran repeat 27/02/15
						Diary items (active) linked to patient 4 historical notes 4 historical quick notes

This section could also be used to record discussions with the patient and prescriber.

Appendix 3

To search for patients dispensed oral anticoagulants in RxOne:

Go to 'Drug Usage' to create a Patient Drug Usage Report.

The screenshots show the RxOne Patient Drug Usage Report interface. The top screenshot highlights the 'Date Dispensed' fields (Start Date and End Date) with a blue arrow and the text 'Select start and end dates'. The bottom screenshot shows the same interface with the 'Date Dispensed' fields highlighted in yellow.

Script Details

- Date Dispensed: 18 Aug 2017
- Start Date: 18 Aug 2017
- End Date: 18 Sep 2017
- Script Number: (All)
- Stockcard Options: (All)
- Supplier: (All)
- Product Group: (All)
- Product Class: (All)
- Stock Type: (All)
- Search for individual stockcard: ☐
- Sort By:
 - ☒ Script Number
 - ☐ Person Name
 - ☐ Doctor Name
 - ☐ Date Dispensed
 - ☐ Drug

NE BUSINESS

More Care Better Business

The screenshot shows the RxOne Patient Drug Usage Report interface. On the left is a sidebar with navigation links: Go Back, Drug Disp History / MMP, Drugs Query, Stat Let Report, BSOIMPPO Report, Missing Medication Report, Med-Map Bulk Export, and TChart Bulk Export. The main window displays the 'Patient Drug Usage Report' with tabs for Script Details, Extra Script Criteria, Person Criteria, Stock Criteria, and Doctor Criteria. The 'Stock Criteria' tab is selected, and a blue arrow points to it with the text 'Click 'Stock Criteria''. Below the tabs are fields for MS Classification (All), Therapeutic Group (All Therapeutic Group's), and Selected Therapeutic Group's (None). There are also buttons for 'Add Selected Item' and 'Remove Highlighted Items'. At the bottom, there are 'OK (Alt+O)' and 'Cancel (Alt+C)' buttons. The status bar at the bottom indicates 'Patient Drug Usage Report Ver:2017.8.10.4 Viewing Main Database User:MARIE Status' and 'Last Backup to DB Master C Drive: 17 Sep 17 9 PM'.

The screenshot shows the RxOne Patient Drug Usage Report interface. On the left is a sidebar with navigation links: Go Back, Drug Disp History / MMP, Drugs Query, Stat Let Report, BSOIMPPO Report, Missing Medication Report, Med-Map Bulk Export, and TChart Bulk Export. The main window displays the 'Patient Drug Usage Report' with tabs for Script Details, Extra Script Criteria, Person Criteria, Stock Criteria, and Doctor Criteria. The 'Prescription' tab is selected, and a blue arrow points to it with the text 'Select 'Prescription''. Below the tabs are fields for MS Classification (Prescription), Therapeutic Group (All Therapeutic Group's), and Selected Therapeutic Group's (None). There are also buttons for 'Add Selected Item' and 'Remove Highlighted Items'. At the bottom, there are 'OK (Alt+O)' and 'Cancel (Alt+C)' buttons. The status bar at the bottom indicates 'Patient Drug Usage Report Ver:2017.8.10.4 Viewing Main Database User:MARIE Status' and 'Last Backup to DB Master C Drive: 17 Sep 17 9 PM'.

Patient Drug Usage Report

Script Details | Extra Script Criteria | Person Criteria | **Stock Criteria** | Doctor Criteria

MS Classification

Prescription

Therapeutic Group

All Therapeutic Group's

Selected Therapeutic Group's

Oral Anticoagulants

5-Alpha Reductase Inhibitors

ACE Inhibitors

ACE Inhibitors with Diuretics

Acute Migraine Treatment

Adult Products High Calorie

Agents for Control of Status Epilepticus

Agents for Essential Tremor, Chorea and Related Disorders

Add Selected Item

Remove Highlighted Items

OK (Alt+O)

Cancel (Alt+C)

Patient Drug Usage Report 1/10/2017 8:10:4 Viewing Main Database User: MARIE Status

Last Backup to DB Master C Drive 17 Sep 17 9 PM

More Care
Better Business

Patient Drug Usage Report

Script Details | Extra Script Criteria | Person Criteria | **Stock Criteria** | Doctor Criteria

MS Classification

Prescription

Therapeutic Group

All Therapeutic Group's

Selected Therapeutic Group's

Oral Anticoagulants

5-Alpha Reductase Inhibitors

ACE Inhibitors

ACE Inhibitors with Diuretics

Acute Migraine Treatment

Adult Products High Calorie

Agents for Control of Status Epilepticus

Agents for Essential Tremor, Chorea and Related Disorders

Add Selected Item

Remove Highlighted Items

OK (Alt+O)

Cancel (Alt+C)

Patient Drug Usage Report 1/10/2017 8:10:4 Viewing Main Database User: MARIE Status

Last Backup to DB Master C Drive 17 Sep 17 9 PM

More Care
Better Business

A report will be generated like this:

Patent Drug Usage Report For All Scripts/For All Scripts/Therapeutic Group Of Oral Anticoagulants/MS Classification Of 'Prescription'/Date Dispensed Between 18 Aug 2017 00:00:00 And 18 Sep 2017 23:59:59

Script Number	Drug Dispensed	ExpandedSig	Date Dispensed	Person Name	Person Address	Dr Name	Dr Address
16171843	PRADAXA 110MG C BLISTER PACK	Take ONE capsule twice daily with food. SWALLOW WHOLE. DO NOT CHEW	30Aug2017				
16202632	WARFARIN 5MG T (Pink)(GL)	Take ONE tablet daily	15Sep2017				
16208593	WARFARIN 1MG T (Brown)(GL)	Take TWO tablets daily according to INR results	11Sep2017				
16221480	DABIGATRAN ETEXILATE 110MG C (BOE)	Take ONE capsule twice daily with food. SWALLOW WHOLE. DO NOT CHEW. Space capsules at least 8 hours apart	21Aug2017				
16235130	WARFARIN 1MG T (Brown)(GL)	Take as directed according to INR. Regular blood tests recommended	23Aug2017				
16247083	WARFARIN 1MG T (Brown)(GL)	Take ONE tablet alternating with TWO tablets (TWO tablets SAT SUN)	23Aug2017				
16248520	PRADAXA 110MG C BLISTER PACK	Take ONE capsule twice daily. SWALLOW WHOLE. DO NOT CHEW	21Aug2017				
16250642	MAREVAN 1MG T (Brown)	Take once daily according to INR results as directed. Regular blood tests are recommended to ensure the dose is right for you.	18Aug2017				
16251270	WARFARIN 1MG T (Brown)(GL)	Take according to INR results	23Aug2017				
16251976	WARFARIN 1MG T (Brown)(GL)	Take FIVE tablets Mon, Wed, Fri and FOUR tablets Sun, Tue, Thu, Sat or as per INR results as directed	13Sep2017				
16251975	WARFARIN 1MG T (Brown)(GL)	Take FOUR tablets daily or as directed by INR	05Sep2017				
16258520	DABIGATRAN 150MG C (BOE)	Take ONE tablet twice daily. SWALLOW WHOLE. DO NOT CHEW	18Aug2017				
16264850	DABIGATRAN ETEXILATE 110MG C (BOE)	Take ONE capsule twice daily (at least 8 hours apart). Swallow whole, do not crush or chew	06Sep2017				
16265480	WARFARIN 1MG T (Brown)(GL)	Take TWO tablets alternating with THREE tablets daily or as directed according to INR	04Sep2017				
16273432	PRADAXA 110MG C BLISTER PACK	Take ONE capsule twice daily with food to prevent blood clots. SWALLOW WHOLE. DO NOT CHEW	12Sep2017				
16291120	PRADAXA 110MG C BLISTER PACK	Take ONE capsule twice daily with food. SWALLOW WHOLE. DO NOT CHEW	29Aug2017				
16294150	PRADAXA 150MG C BLISTER PACK	Take ONE capsule twice daily to prevent clotting. Take with food and water	25Aug2017				
16298872	PRADAXA 150MG C BLISTER PACK	Take ONE capsule twice daily	28Aug2017				
16304342	DABIGATRAN ETEXILATE 110MG C (BOE)	Take ONE capsule twice daily. SWALLOW WHOLE. DO NOT CHEW	04Sep2017				
16304970	WARFARIN 3MG T (Blue)(GL)	Take ONE tablet daily	12Sep2017				
16305020	WARFARIN 5MG T (Pink)(GL)	Take ONE tablet daily or as directed (total dose= 8mg)	12Sep2017				
16314180	PRADAXA 110MG C BLISTER PACK	Take ONE capsule TWICE daily with food. SWALLOW WHOLE. DO NOT CHEW	05Sep2017				
16314472	PRADAXA 110MG C BLISTER PACK	Take ONE capsule TWICE daily with food. SWALLOW WHOLE. DO NOT CHEW	06Sep2017				
16317432	PRADAXA 110MG C BLISTER PACK	Take ONE capsule twice daily with food.	02Sep2017				
16324400	WARFARIN 1MG T (Brown)(GL)	Take as directed by INR result.	14Sep2017				
16324400	WARFARIN 1MG T (Brown)(GL)	Take as directed by INR result.	14Sep2017				
16324400	WARFARIN 1MG T (Brown)(GL)	Take as directed by INR result.	21Aug2017				
16324400	WARFARIN 1MG T (Brown)(GL)	Take as directed by INR result.	21Aug2017				

Can export to excel

Patent Drug Usage Report For All Scripts/For All Scripts/Therapeutic Group Of Oral Anticoagulants/MS Classification Of 'Prescription'/Date Dispensed Between 18 Aug 2017 00:00:00 And 18 Sep 2017 23:59:59

Export Format: Export to Selected File

File to Export To: Select file to export to

Export All To Bulk Stock Edit
Export All To Mailing Labels
Email As CSV
Email As PDF
Email As XML

Export (AB-E)
Export Selected Rows (AB-S)
Save Options As Default For This Report (AB-D)
Cancel (AB-C)

Settings For Select

Field Name	Export Column
Script Number	<input checked="" type="checkbox"/>
Drug Dispensed	<input checked="" type="checkbox"/>
ExpandedSig	<input checked="" type="checkbox"/>
Date Dispensed	<input checked="" type="checkbox"/>
Person Name	<input checked="" type="checkbox"/>
Dr Name	<input checked="" type="checkbox"/>
Dr Address	<input checked="" type="checkbox"/>
PrescriberID	<input checked="" type="checkbox"/>

Select what you would like to export

Then delete any prescriptions that don't include warfarin, dabigatran or rivaroxaban so you can find 10 relevant patients to randomise for audit.

Interventions can be recorded in the 'Events Audit' section where you can record face-to-face or phoned conversations, or insert comments.