



COMMUNITY PHARMACY WARFARIN SERVICE

Community Pharmacy Anti-coagulation Management (CPAM) Service

INFORMATION FOR GENERAL PRACTICE

Introduction

In countries such as the UK, Australia, Canada and USA anticoagulant management services are provided by pharmacists and are successful in achieving a high standard of care.

Following an initial pilot pharmacy site in Hamilton¹, a Community Pharmacy Anti-coagulation Management (CPAM) Service pilot was undertaken by Health Workforce NZ in collaboration with the Pharmaceutical Society of NZ and the New Zealand College of Pharmacists². The pilot proved very successful with patients' INR managed in range 80% of the time, and over 80% compliance with appointments. Appendix One provides a summary of the results.

In 2012 and 2013 the service was rolled out to 109 new pharmacies, making a total of 125 pharmacies now contracted to provide this service. Additional pharmacies will be recruited in 2014.

Overview - What does the Community Pharmacy Warfarin Service involve?

Community Pharmacy Warfarin Services are the provision of INR point-of-care testing by accredited community pharmacists. Following a finger prick sample of blood analysed in a machine to determine the INR result, the pharmacist adjusts the next dose of warfarin according to agreed Standing Orders and an approved on-line computer decision-support system which calculates the dose and date of the next test.

Similar to finger prick testing for blood glucose, the test result is available within minutes and the patient receives printed treatment advice immediately on the dose they should take. The GP is automatically informed of each test and the recommended dose.

How does the Service work?

1. The GP refers the patient to the service.
2. The patient's INR is tested using a finger-prick sample of blood placed on a test strip and analysed in a small portable device. The INR Online software automatically provides the result and calculates a recommended dose.
3. The pharmacist reviews the result, provides advice on the dose and date of the next test, and prints out a small dosing calendar for the patient to take away.
4. The INR result is automatically sent to the PMS Provider Inbox. In addition, the GP is alerted to any results outside the set range of 1.5 – 4. Using this information the GP has the opportunity to adjust the suggested dose and date of the next test.
5. Patients are able to return to care by the GP at any time. Patients not well controlled or non compliant may be referred back to their GP.

¹ Pharmacy 547

² *Community Pharmacist-led Anticoagulation Management Service – Final Report*. University of Auckland, September 2011. <http://www.healthworkforce.govt.nz/about-us/publications-and-reports/reports>

The key points are:

- The Community Pharmacy Warfarin Service is an integrated patient care model. The pharmacist and GP are working collaboratively for the benefit of the patient, and as integral members of the primary health care team.
- The pharmacist is working under agreed Standing Orders from the GP, and the GP retains responsibility for the patient.
- Pharmacists are skilled in medication management, and this service is within their scope of practice.
- The GP is informed immediately of all INR results and doses, and has the opportunity to suggest an alternative dosing regime to that recommended by the decision support system.

Results sent to the Provider In-Box (and also to TestSafe)

The way in which results are sent to the practice is the same way the practice receives results from the laboratory. That is, all test results are sent to the supervising doctor as HL7 messages via HealthLink to the PMS Provider Inbox, and so information is able to be uploaded into the patient's file as per usual.

In Auckland and Christchurch the results also go to the local data repository, TestSafe.

What are the benefits?

Benefits for patients

Patients involved

- Immediate information and advice
- Patients really appreciate being able to view their results on the computer screen, and graphs showing progress.

Convenience and acceptability

- The test involves a finger prick sample of blood (patients really like this!)
- A dosing calendar is provided to take away
- Able to receive automatic e-mail reminders when their next test is due
- Can access their own results via the internet

Health benefits (Refer to Appendix 1)

- Increased compliance and control
- Reduced complications / adverse events

"The patients we are testing LOVE it"

"It is three months since we started. All of our patients are now staying within their target area and are way more compliant than with (testing by) the Laboratory"

Benefits for GPs and pharmacists

The delivery of patient-centred care

- The service is convenient and highly acceptable to patients and has important health benefits

Collaboration and multi-disciplinary team involvement

Utilisation of the pharmacist's skills in medicines management

Practice staff time is freed up

Experience shows that GPs and practice nurses are very supportive when they see first-hand how the service works.

The doctor retains overall responsibility

The GP retains overall responsibility for the patient. The pharmacist is working under agreed Standing Orders from the GP this enables the pharmacist to make warfarin dose adjustments according to the INR test result. The GP is alerted and his/her advice sought if the INR results are outside the specified safe range.

Good control reduces complications

Warfarin is a high risk medicine, but complications are reduced if the patient stays within the therapeutic treatment range (TTR).

The immediacy of information about the INR result and dose of warfarin assists with compliance.

The INR Online Tool uses computer decision support software. When compared to manual dosing, computer-assisted dosing has been shown to increase the time that patients' INRs are within the target range, and therefore has the potential to significantly reduce the risk of bleeding and thromboembolic events³.

If I agree to take part, do I need to refer all my patients?

General practice can work with the pharmacy to identify patients suitable for the service.

It is likely there will still be patients who will need to continue to be managed by the practice, and others whose circumstances change who need to change back. Patients can opt-out at any time.

Safety

Patient safety is of primary importance. Warfarin is not without risks and it is important that there are several safe guards in place to ensure patient safety.

- All pharmacists must be accredited to provide this service.
- Their practice is closely regulated by the Standing Order which limits their scope of practice
- At least two pharmacists are trained at each site.
- All sites perform regular quality control testing.
- Patients are asked about adverse events, new medication and hospital visits each time they have a test
- The pharmacist contacts the GP about tests out-of-range. In addition, an alert on tests out-of-range is sent by email to the practice nurse or other contact person at the practice. This is an extra safety feature to ensure the GP is fully informed of test results that are out of range. This email provides the following:
 - The latest INR result
 - The recommended dose
 - The date of the next test
 - A graph showing recent warfarin control
 - A list of previous results
 - The pharmacy contact details to enable the GP to contact the pharmacist to discuss dose recommendations, and make changes as necessary

³ Keeling D, Baglin T, Tait C, Watson H, Perry D, Baglin C, et al. Guidelines on oral anticoagulation with warfarin – 4th edition. *Br J Haematol*. 2011 August; 154(3):311-24.

Reliability

There are many studies comparing INR results from the CoaguChek XS Plus device with laboratory testing, including one from this country. These show an excellent correlation between results. (An older version of the CoaguChek did show some discrepancy between results at a high INR, but the most recent device has been found to be reliable with all INR results).

Quality control

Testing is performed under a standard operating procedure. Pharmacists accredited to provide this service are required to perform quality control testing on a regular basis to ensure the testing device and their procedures are up to a recognised standard. They are also required to report on adverse events, compliance and anticoagulant control every three months.

There is currently no national register which documents complications related to warfarin. However, INR Online records complications such as bleeding, and this provides the opportunity to more closely monitor national trends and provide audit data about warfarin use.

The place of point-of-care INR testing in general practice and the community

Yes, there is a place for INR point-of-care testing in general practice. Several practices have chosen to purchase the equipment and are offering this service, though they may not be using the decision support software which enables dosing recommendations, documentation and analysis of test results, and connectivity with other health systems. The software also provides a dosing calendar able to be given to the patient, and patients find this very useful.

Some members of the public have purchased the equipment to enable self testing at home.

Next steps

If you are approached by a local community pharmacist specially trained and accredited to provide this service, or would like to offer this service to your patients through a local participating pharmacy the next steps are:

- Involve the practice manager
- Identify patients who would benefit from the service
- The practice nurse might be able to talk to selected patients the next time their test is due and invite them to participate in the service.
- Complete a referral form for each patient
 - The pharmacist may also be able to assist by pre-filling out some of the information on the form.
- Sign the Standing Orders
- Ensure you have a good process in place to allow the pharmacy to contact you

Who do I contact if I have questions?

For further information on how the service works contact local pharmacies or general practices involved in the Community Pharmacy Warfarin Service.

Alternatively, contact pharmacy@dhbss.health.nz - phone 04 803-5822 - who can answer any questions, and/or put you in touch with a local pharmacy or a general practice involved in this service near you.

Appendix One

Results from the Community Pharmacy Anticoagulation Management (CPAM) service pilot

Studies overseas have shown that anti-coagulation management services involving pharmacists can lead to improved anticoagulation control, a reduced frequency of warfarin-related hospital admissions, a lower frequency of drug interactions, and improved patient compliance and satisfaction⁴.

In 2010/11, a Community Pharmacy Anticoagulation Management (CPAM) service pilot was undertaken by Health Workforce NZ in collaboration with the Pharmaceutical Society of NZ and the New Zealand College of Pharmacists⁵. The results showed anticoagulation management services by community pharmacies to be a safe and effective alternative to standard care in general practice.

High Compliance

In the pilot a high level of compliance with appointments was achieved, with the majority of tests (83.1%) performed on or before the due date. Factors contributing to the high level of compliance included:

- increased accessibility of testing compared to having the test at a laboratory collection centre
- patient preference to having a finger prick compared to a blood test
- immediate information on the results
- improved tracking and follow-up of patients known to be poor attendees

Improved Therapeutic Treatment Range (TTR)

As part of the pilot, 6 months of prior INR data was obtained for 154 patients from 6 sites. For these patients, the mean time within the therapeutic treatment range (TTR) in the pilot was 77.5%, compared to 60.4% before the pilot.

Patient satisfaction

In the pilot the large majority of patients identified the Service to be convenient and accessible. They identified it to be preferable to GP care, expressed confidence in the pharmacist performing the service and for the service to be continued. A small proportion of patients identified they preferred GP care.

⁴ Saokaew S, Permsuwan U, Chairyakunapruk N, Nathisuwan S, Sikonhasarn A. Effectiveness of pharmacist-participated warfarin therapy management: a systematic review and meta-analysis. *J Thromb Haemost*. 2010 Nov;8(11):2418-27.

⁵ *Community Pharmacist-led Anticoagulation Management Service – Final Report*. University of Auckland, September 2011. <http://www.healthworkforce.govt.nz/about-us/publications-and-reports/reports>