BrisDoc Patient care by people who care

Proudly employee owned.

Charlotte Keel MEDICAL PRACTICE

Vitamin B12 Deficiency & PSD

Version:	Owner:	Created:
1.3	C Talbot & S Mohamed	Combined 21.3.25
Published:	**Approving Director:**	**Next Review**
20/10/2026	Jo Temple	20th April 2027

Contents

Vitamin B12 Deficiency 3
Administration 6
Storage 6
Monitoring 6
Documentation.....7
Claiming 7
What is a patient specific direction (PSD) 7
Writing a Vitamin B12 injection PSD in EMIS 8
Version Control.....11

Vitamin B12 Deficiency

Diagnosis

Offer an initial diagnostic test for vitamin B12 deficiency to people who have:

• at least 1 common symptom or sign (see box 1) and

• at least 1 common risk factor for the condition (see box 2).

Use clinical judgement when deciding whether to test people who have at least 1 common symptom or sign (see box 1) but no common risk factors (see box 2).

Use either total B12 (serum cobalamin) or active B12 (serum holotranscobalamin) as the initial test for suspected vitamin B12 deficiency unless:

• the test needs to be done during pregnancy, or

• recreational nitrous oxide use is the suspected cause of deficiency.

Use active B12 as the initial test for suspected vitamin B12 deficiency during pregnancy.

If the person has suspected vitamin B12 deficiency caused by recreational use of nitrous oxide:

• use plasma homocysteine or serum methylmalonic acid (MMA) as the initial test and

• if using plasma homocysteine, refer the person to phlebotomy services in secondary care for this test.

Take blood samples for diagnostic tests before starting vitamin B12 replacement.

Box 1 – signs & symptoms
• abnormal findings on a blood count such as anaemia or macrocytosis • cognitive difficulties such as difficulty concentrating or short-term memory loss (sometimes described as 'brain fog'), which can also be symptoms of delirium or dementia • eyesight problems related to optic nerve dysfunction:

— blurred vision

— optic atrophy

— visual field loss (scotoma)

• glossitis

• neurological or mobility problems related to peripheral neuropathy, or to central nervous system disease including myelopathy (spinal cord disease):

— balance issues and falls caused by impaired proprioception (the ability to sense movement, action and location) and linked to sensory ataxia (which may have been caused by spinal cord damage)

— impaired gait

— pins and needles or numbness (paraesthesia)

• symptoms or signs of anaemia that suggest iron treatment is not working properly during pregnancy or breastfeeding

• unexplained fatigue.

Box 2 – risk factors

• diet low in vitamin B12 (without the regular use of over-the-counter preparations), for example, in people who:

— follow a diet that excludes, or is low in, animal-source foods (such as a vegan diet, or diets excluding meat for religious beliefs)

— do not consume food or drinks fortified with vitamin B12

— have an allergy to some foods such as eggs, milk or fish

— find it difficult to buy or prepare food (for example, people who have dementia or frailty, or those with mental health conditions)

— find it difficult to obtain or afford foods rich in vitamin B12 (for example, people on low income)

— have a restricted diet (for example, because of an eating disorder)

• family history of vitamin B12 deficiency or an autoimmune condition

• health conditions:

— atrophic gastritis affecting the gastric body

— coeliac disease or another autoimmune condition (such as thyroid disease,

Sjögren's syndrome or type 1 diabetes)

• medicines:

– colchicine

– H2-receptor antagonists

– metformin (see the MHRA safety advice on metformin and reduced vitamin B12)

– phenobarbital

– pregabalin

– primidone

– proton pump inhibitors

– topiramate

• previous abdominal or pelvic radiotherapy

• previous gastrointestinal surgery:

– many bariatric operations (for example, Roux-en-Y gastric bypass or sleeve gastrectomy)

– gastrectomy or terminal ileal resection

• recreational nitrous oxide use.

Interpreting total or active B12 test results

Results if testing total B12 concentrations	Results if testing active B12 concentrations	Likelihood of vitamin B12 deficiency
Less than 180 nanograms (133 pmol) per litre	Less than 25 pmol per litre	Confirmed vitamin B12 deficiency
Between 180 and 350 nanograms (133 and 258 pmol) per litre	Between 25 and 70 pmol per litre	Indeterminate test result – possible vitamin B12 deficiency
More than 350 nanograms (258 pmol) per litre	More than 70 pmol per litre	Test result suggests vitamin B12 deficiency is unlikely

Treatment

Taken from BNF (https://bnf.nice.org.uk/drugs/hydroxocobalamin/)

Pernicious anaemia and other macrocytic anaemias without neurological involvement for hydroxocobalamin

By intramuscular injection

Initially 1 mg 3 times a week for 2 weeks, then 1 mg every 2–3 months.

Pernicious anaemia and other macrocytic anaemias with neurological involvement for hydroxocobalamin

By intramuscular injection

Initially 1 mg once daily on alternate days until no further improvement, then 1 mg every 2 months.

Administration

Check PSD is up-to-date and includes your initials (task NMP if new PSD needed)

Administered by trained nurse or HCA who has been trained and assessed as competent

Intramuscular injection into the deltoid, alternate arm for each dose

Storage

Store at or below 25°C. Protect from light

Monitoring

No follow up tests are required but review should be agreed with GP

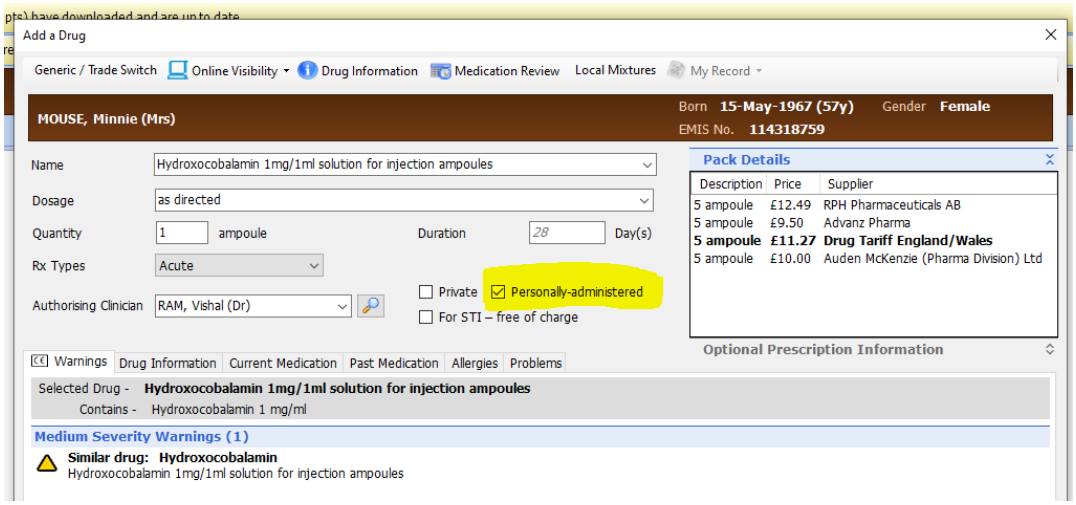
Documentation

Problem – Cobalamin deficiency/pernicious anaemia/gastrectomy/gastric bypass

Injections Template (Ardens), All injections tab – consent, B12 tab – procedure (manufacturer, expiry date, batch number and route), follow-up (adjust date according to frequency of administration)

Claiming

Add 'hydroxocobalim 1mg/1ml solution for injection' to medication list and click 'issue later' so that prescriptions team can claim for this medication.



If prescription is for the community nurse team to administer this will need to be prescribed by prescribing clinician with clear instructions for District nurse administration only.

What is a patient specific direction (PSD)

A patient specific direction (PSD) is a written instruction from a prescriber for a medication to be administered to a named patient after the prescriber has assessed the patient and is satisfied that the medication to be administered serves the needs of the individual.

Minimum requirements for a PSD:

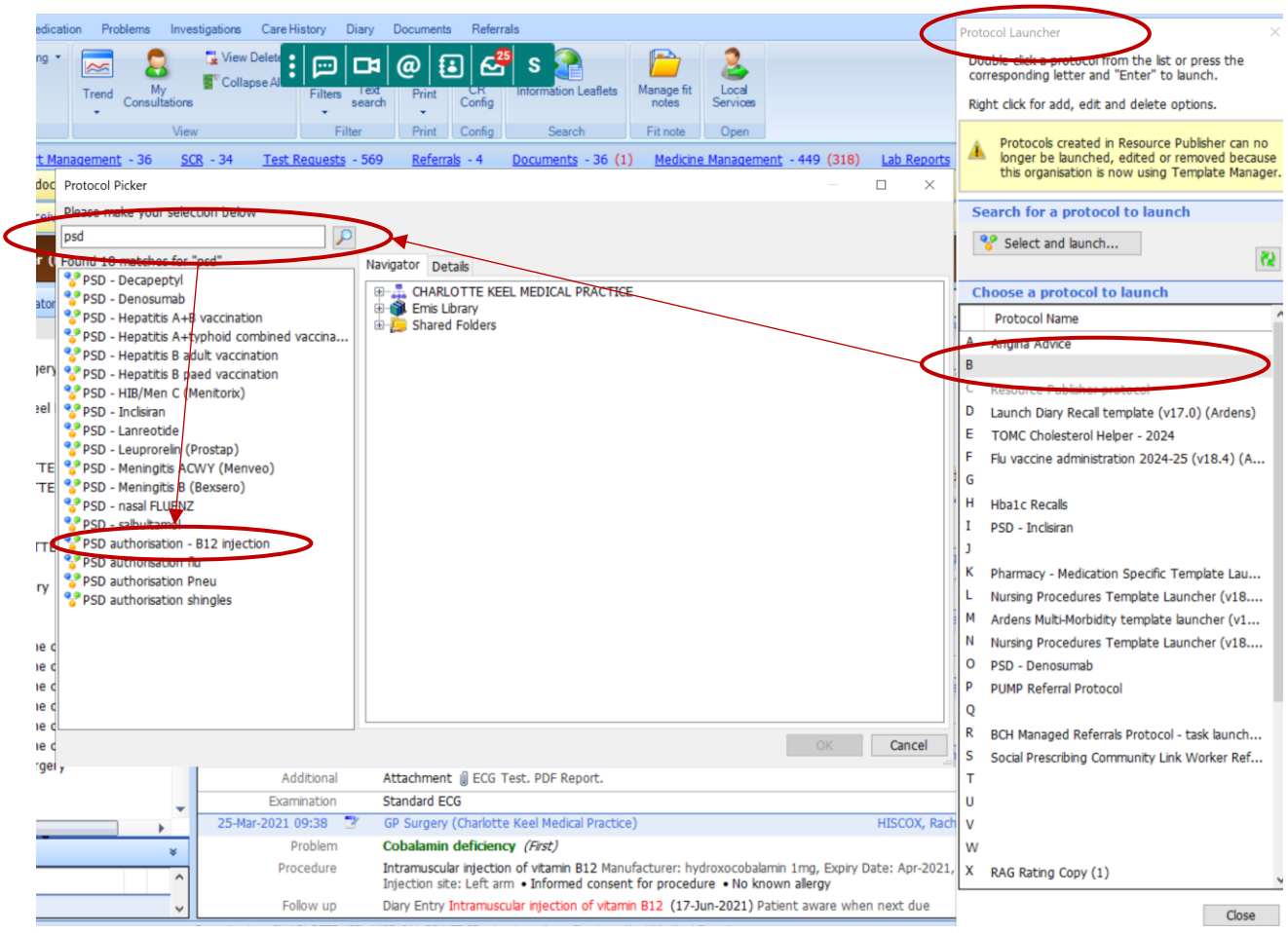
- Patient's name
- Name, form and strength of medication (generic or brand name where appropriate)
- Route of administration
- Dose
- Frequency
- Date of treatment/ number of doses/ frequency/ date treatment ends or requires review as applicable
- Signature of prescriber and date PSD is written

Writing a Vitamin B12 injection PSD in EMIS

A shortcut F12 key has been developed to facilitate generating a PSD for Vitamin B12 injection.

How to add the F12 key

- Make sure you are on the EMIS screen and type the F12 key on your keyboard.
- This will open the Protocol Launcher
- Click on a blank letter to add the Vitamin B12 PSD shortcut – this will be highlighted.
- Right click and click 'Add' – this will open the protocols available.
- Type 'PSD' in the search box – a list of PSD protocols will be displayed.
- Select 'PSD authorisation – B12 injection' and double click on this or click OK.
- This will be added to your F12 protocol list.
- You can then close your F12 list.

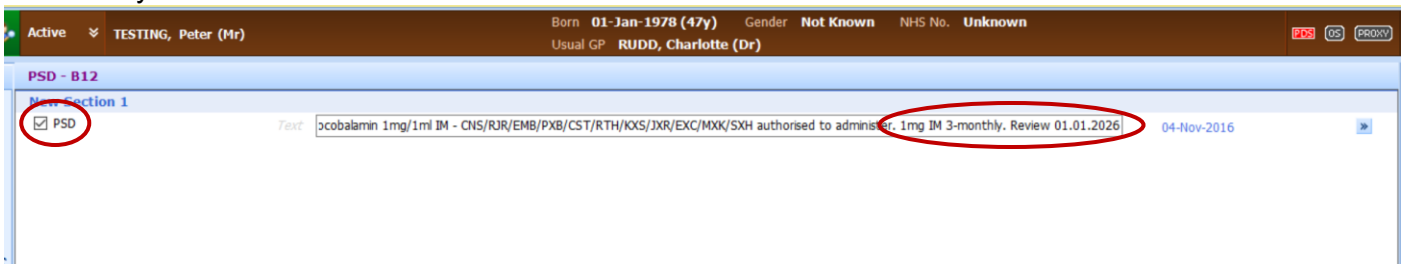


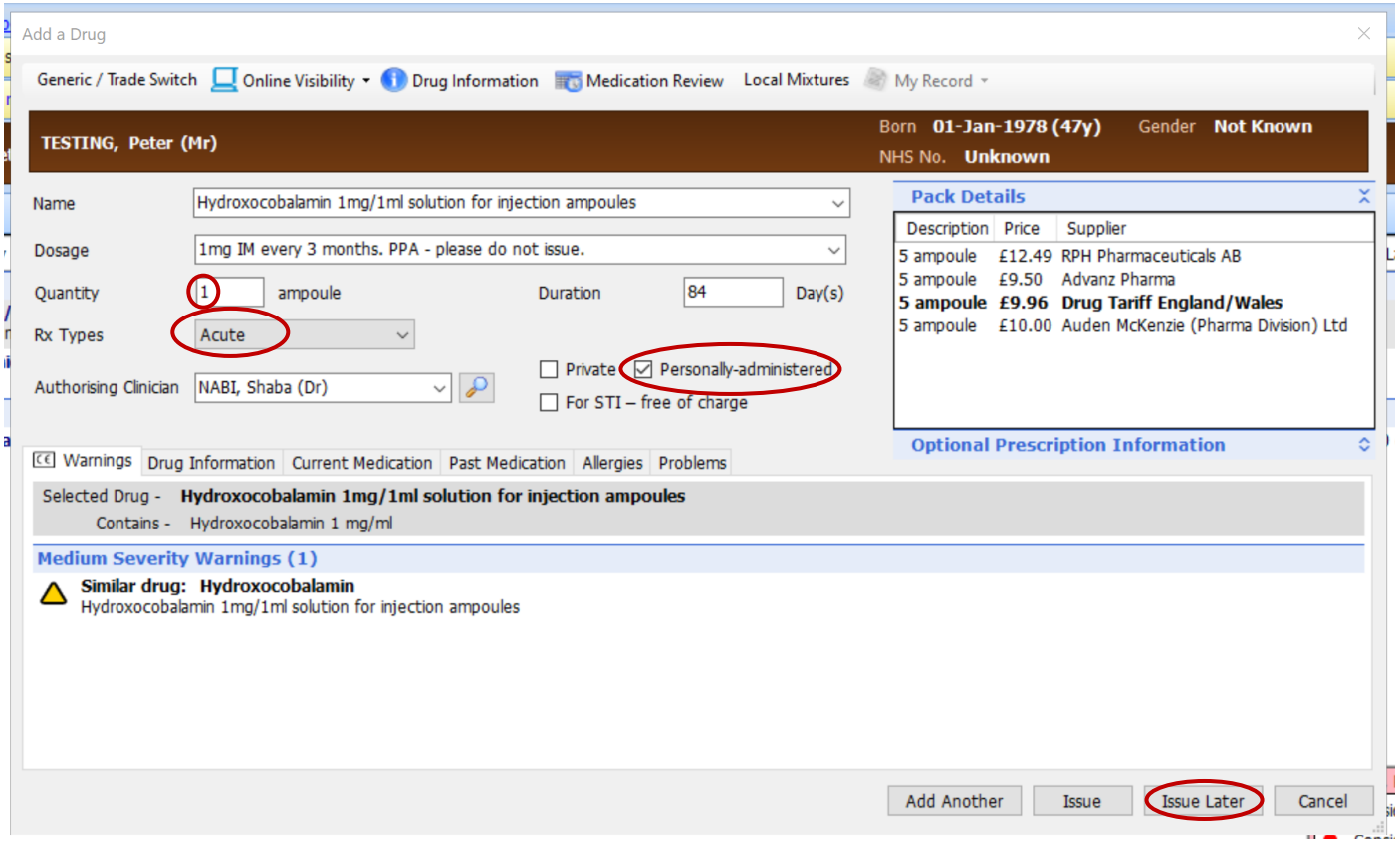
BrisDoc Patient care by people who care

Proudly employee owned.

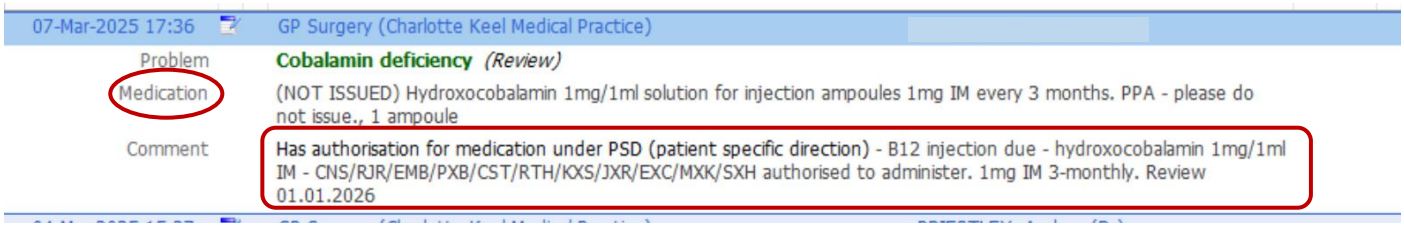
How to Write a Vitamin B12 injection PSD

- Open a new consultation
- Add the Problem ‘Cobalamin deficiency’
- Type on the F12 key on your keyboard to open the Protocol Launcher
- Select the ‘PSD authorisation – B12 injection’ and double click on this – this will open a prepopulated PSD authorisation.
- Click on the box next to PSD, and free type the dose, frequency and length of time that you would like the patient to have the injection, and the review date (there is not specified length of time, so this would be based on clinical judgement). e.g 1mg IM on alternate days for 6 doses, then every 3 month. Review 31.12.2026.
- Save the template.
- Add Vitamin B12/ Hydroxocobalamin injection to the medication list:
  - as an acute medication
  - single dose (quantity 1) unless a prescription needs to be issued for administration by the district nurses, in which case the quantity will depend on the frequency of administration and will need to be printed or issued to the pharmacy electronically.
  - Tick the box ‘personally administered’ to avoid the prescription being issued electronically to the pharmacy, but do not issue the prescription. This will be printed during the claims process at the end of the month.
- Save your consultation.





- Your saved consultation will show the Hydroxocobalamin prescription and PSD.



References:

Specialist Pharmacy Service (SPS), 2024. *Patient specific directions (PSD)* [Online]. Available from: https://www.sps.nhs.uk/articles/patient-specific-directions-psd/ [Accessed 7 March 2025].

Version Control

Date	Version	Author	Change Details
Aug 22	1.0	J Godfrey	
May 2024	1.1	C Talbot	Reviewed and updated to current guidelines
December 2024	1.2	C Talbot	Reviewed and updated to current guidelines
March 2024	1.3	S Mohamed	Updated to PSD protocol