Redesigning the IM Vitamin B12 Injection Pathway in General Practice to Release Capacity and Maintain Patient Choice

NOTTINGHAMSHIRE ALLIANCE TRAINING HUB

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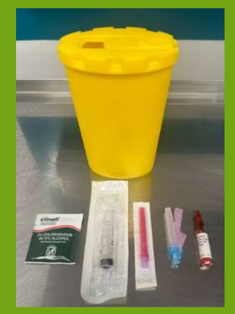


Abstract

This quality improvement project in a single GP practice is redesigning the maintenance pathway for patients receiving intramuscular hydroxocobalamin (vitamin B12). The current model relies on frequent short, face-to-face appointments, mainly delivered by healthcare assistants, which creates ongoing demand on appointment capacity and limits opportunities for review. Using Nottinghamshire APC vitamin B12 guidance, a registered nurse has scoped current activity, developed a screening process, and identified patients who may be suitable either for an opt-in self-administration pathway or, where clinically appropriate, switching to oral supplementation with GP review. Self-administration is supported through a nurse-led teaching and competency appointment with a supervised first injection, consent, written guidance, and safety-netting, followed by an annual nurse telephone review documented in SystmOne. The project is now entering early implementation, with the first teaching sessions due to commence. The outcomes presented are projections based on baseline activity and uptake scenarios rather than post-implementation results. Evaluation will track appointment reduction, clinical time released, uptake, patient and staff experience, and safety concerns at 1, 2 and 5 years.

Introduction

Vitamin B12 deficiency is commonly managed in primary care and many patients remain on long-term intramuscular hydroxocobalamin injections. In day-to-day practice this can generate a high volume of short, routine face-to-face appointments that add pressure to clinic capacity and can become task focused rather than review driven. Nottinghamshire APC guidance highlights that some patients may be appropriate for oral supplementation and that some stable patients may be able to self-administer injections safely with the right screening, training, consent and safety-netting.
This project was initiated to align the practice pathway with local guidance, reduce avoidable routine appointments, and protect capacity while maintaining patient safety and choice. Scoping and baseline measurement have been completed using SystmOne data from the past three months, and a registered nurse has developed and applied a screening process to identify patients suitable for pathway change. An initial cohort has now been identified for opt-in self-administration, alongside patients who may be appropriate for oral supplementation with GP review.
The next step is early implementation, starting nurse-led teaching and supervised first injections with the first patients who choose to switch.

Methodology

. This is a quality improvement project in one GP practice.
Baseline activity was taken from three months of SystmOne data. The current pathway is mainly healthcare assistant led and face to face, with occasional registered nurse cover. The service delivers around 25 appointments per week, booked at five minutes including documentation, with most patients attending 12-weekly.

A registered nurse screened patients using Nottinghamshire APC vitamin B12 guidance to confirm the most appropriate ongoing pathway. Patients were allocated to continue practice-administered IM injections, opt in to supported self-administration, or be flagged as potentially suitable for oral supplementation with GP review.

For self-administration, eligibility includes capacity, dexterity, stable diagnosis, and no safeguarding concerns. Patients receive a single 20-minute nurse-led teaching and competency appointment that replaces a routine injection slot. The first injection is supervised in surgery then completed at home thereafter. Competency is documented via checklist and nurse sign-off, with consent, written information, and safety-netting provided. Equipment is supplied and a one-year prescription is arranged through community pharmacy, including a sharps bin.
Ongoing monitoring is planned as a 10-minute annual nurse telephone review using a dedicated SystmOne template, with escalation to a GP if symptoms suggest low B12 or the injection interval requires review. Outcomes will be reviewed at 1, 2 and 5 years.

What is Vitamin B12?

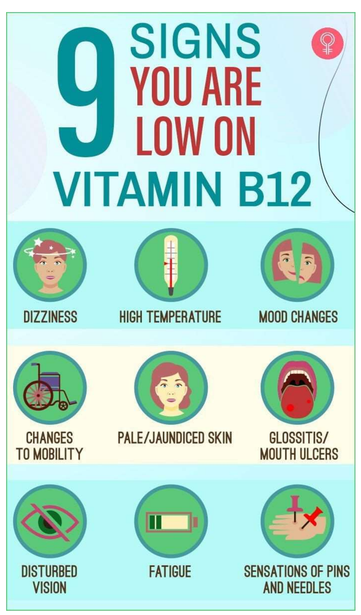
It is a vitamin your body needs to keep your nerves and blood cells healthy.
It helps you:

* make red blood cells (so you don't become anaemic)
* keep the nervous system working properly (memory, balance, sensation)
* make DNA (basic cell function)

We mainly get B12 from animal-based foods like meat, fish, eggs, and dairy, and from fortified foods (some cereals, plant milks).
Our bodies store B12 in the liver, so deficiency can take a while to develop.

Common reasons for low B12 include

- poor absorption (e.g., pernicious anaemia)
- gut conditions or surgery
- long-term metformin or PPIs, and
- low dietary intake (especially vegan diets).



Results and Projected Impact

The project is moving from set-up into early implementation. Work completed includes baseline scoping, development of a nurse-led screening process aligned to Nottinghamshire APC guidance, and identification of patients suitable for opt-in self-administration and for potential switch to oral supplementation with GP review. Supporting processes are in place, including consent, written information, a competency checklist and a SystmOne annual review template.
The figures presented are projections, not observed post-implementation results. Projections are based on current activity of around 1,300 appointments per year and 108 hours of booked contact time per year. The modelling assumes one 20-minute teaching session in year 1 for patients who opt in, then one 10-minute annual nurse telephone review from year 2 onwards.
Figure 1 shows the expected per-year reduction in contact time after year 1. Figure 2 shows how total contact time reduces over 1, 2, 3 and 5 years, which supports capacity planning.
Projected year 2 onwards impact suggests that at 25% uptake the service reduces to around 1,050 contacts per year and 94 clinical hours per year. At 50% uptake this reduces to around 800 contacts and 79 hours. At 75% uptake this reduces to around 550 contacts and 65 hours. These projections exclude any additional capacity impact from switching patients to oral supplementation, so are likely to be conservative.
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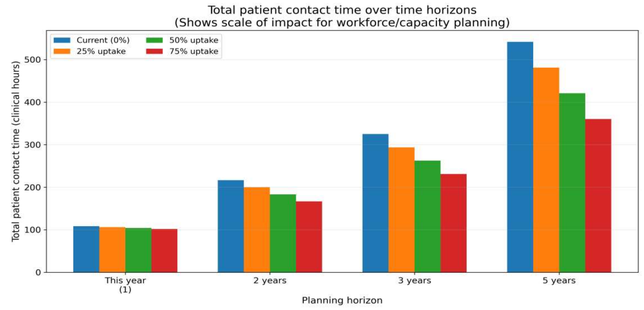

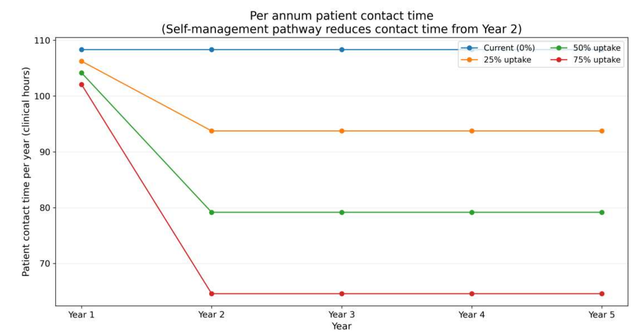

Conclusion

This project has scoped a high-volume IM vitamin B12 injection pathway and developed a guideline-led screening process using Nottinghamshire APC guidance. Patients suitable for opt-in self-administration have been identified, alongside those who may be appropriate for oral supplementation with GP review. Implementation is now commencing with nurse-led teaching and supervised first injections.
Projected modelling suggests the largest capacity benefit is from year 2 onwards, when monitoring reduces to an annual nurse review rather than repeated short face-to-face appointments. The model maintains patient choice by continuing practice-administered injections, while supporting independence for those who opt in. Formal evaluation at 1, 2 and 5 years will test projected impact using observed data on uptake, appointment reduction, time released, patient and staff experience, and safety.