



Items Identified as Low Value for Prescribing in NHS Wales – Paper 3

This resource has been retired July 2026

This resource has been retired and is no longer considered an AWMSG-endorsed resource.

The resource underwent an assessment for review in September 2025. At that time, members of the All Wales Prescribing Advisory Group (AWPAG) agreed that the contents required revision.

All three low value papers underwent review and have been amalgamated in *Medicines identified as low value for prescribing in NHS Wales* published in July 2026.

February 2020

(December 2020 – Section on cyanocobalamin was removed

May 2021 – statement confirming the commencement of active monitoring of items was added on page 3

March 2022 – section on chloral hydrate [cloral betaine] updated to reflect latest MHRA drug safety update)

This document has been prepared by the All Wales Prescribing Advisory Group (AWPAG) with support from the All Wales Therapeutics and Toxicology Centre (AWTTC), and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG).

This resource has now been retired and is no longer considered an AWMSG endorsed resource.

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1.0 INTRODUCTION

The purpose of this document, the third phase in an ongoing series*, is to encourage effective use of resources at a time when there are real pressures on the NHS. This document provides advice to clinicians and health boards in Wales, with the aim of reducing unwarranted variation in the use of items that should not routinely be prescribed.

“Value-based healthcare” has been defined as *“the equitable, sustainable and transparent use of the available resources to achieve better outcomes and experiences for every person”*¹. Value-based healthcare can be considered as a comprehensive concept built upon four value pillars². The *Low Value for Prescribing in NHS Wales* initiative is particularly relevant to two of these value pillars; technical value and allocative value. Technical value is defined as *“the achievement of best possible outcomes with available resources”*², which is supported by the approach taken in this initiative to discourage the use of items that have been identified as less suitable for routine prescribing. Allocative value is defined as *“the equitable resource distribution across all patient groups”*², which is delivered within this initiative through providing the supporting data across health boards, enabling identification of potential local populations to target where unexplained variation exists.

As well as providing recommendations, this document also details both general and specific exceptions. However, it will be for health boards to interpret the advice and determine how it is best implemented; this will include determining the circumstances in which these items should or should not be prescribed.

Prescribers are expected to have due regard for this advice when deciding whether or not to prescribe these items. However, the guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.

2.0 BACKGROUND

In 2018–2019, prescribing expenditure in NHS Wales totalled £0.91 billion[†]. This represented 5.9% of total Welsh Government expenditure. Welsh Government, NHS Wales Chairs, and Chief Executives and Medical Directors have agreed a National Improvement Programme, which includes a commitment to identify opportunities to improve prescribing and develop a list of items for restricted use. It is therefore vital that a prudent approach is taken to reviewing the prescribing of items considered as not suitable for routine prescribing.

This paper is the third of a series aimed at decreasing the prescribing of items identified as low value for prescribing in NHS Wales. The [first Medicines Identified as Low Priority for Funding in NHS Wales paper](#) was endorsed by the All Wales Medicines Strategy Group (AWMSG) in October 2017, with the [second paper](#) endorsed in December 2018^{3,4*}. As detailed within *A Healthier Wales: our plan for Health and Social Care* published by the Welsh Government in 2018, one of the ten national design principles to drive change and transformation is that of “Higher Value”⁵. This can be applied through achieving better outcomes and a better experience for people at reduced cost, with less variation and no harm.

* Please note the initiative title change from ‘Low Priority for Funding’ to ‘Low Value for Prescribing’ was agreed in February 2020.

[†] This figure is a combined calculation of primary care and secondary care spends taken from CASPA (NHS Wales Shared Services Partnership) and Medusa (NHS Wales Informatics Service) systems respectively.

Health board/trust access to the advice contained within this document will enable a more equitable process for making decisions about organisational policies for prescribing. Each health board/trust will need to make decisions on local implementation individually, ensuring they take into account their legal duties to advance equality and reduce health inequalities.

In June 2019, NHS England published the document [Items which should not be routinely prescribed in primary care: Guidance for CCGs](#)⁶. This provided an update to the previous guidance from 2017. Selected items and item groups have been taken from the updated guidance, in conjunction with some suggested additions based upon requests made from health boards within NHS Wales.

Due to the workload pressures across NHS Wales during the COVID-19 pandemic, it had been agreed at the November 2020 meeting of AWMSG that the items listed within this paper were not to be actively monitored. This decision was reviewed by the All Wales Prescribing Advisory Group (AWPAG) in March 2021 and the active monitoring of this guidance commenced from April 2021.

RETIRED

3.0 RECOMMENDATIONS

The aim of this document is to minimise the prescribing of items that offer low clinical effectiveness to patients or where more cost-effective treatments are available. Nine items/item groups have been identified for inclusion within this paper. These are:

- Items of low clinical effectiveness:
 - chloral hydrate (cloral betaine)
 - minocycline
 - probiotics
 - rubefacients
 - silk garments
 - vitamins and minerals*.
- Items where more cost-effective alternatives are available:
 - alimemazine
 - aliskiren
 - blood glucose testing strips.

The six items considered to be of low clinical effectiveness, due to a lack of robust evidence to support their widespread use, are detailed in Table 1. Two of these listed items (chloral hydrate [cloral betaine] and minocycline) are also considered for inclusion due to the risks of patient harm associated with their use. The items which are clinically effective but where more cost-effective alternatives are available, are detailed in Table 2. In both tables a specific recommendation has been made for each of these items/item groups, as well as the rationale for the recommendation, and any guidance on patient exemptions. These recommendations were agreed at the All Wales Prescribing Advisory Group (AWPAG) meeting held in June 2019. Where appropriate, PrescQIPP and other resources have been used to provide further support to the recommendations. PrescQIPP is an NHS funded, not-for-profit organisation supporting quality, optimised prescribing for patients⁷. A summary of the classification criteria used for item inclusion within this phase of the initiative is provided within Appendix 1.

The 2018–2019 NHS Wales expenditure for each of the identified items/item groups is provided within Tables 1 and 2. However, this does not necessarily represent the potential savings available as alternative products may need to be substituted. Appendix 2 provides a breakdown of the primary care expenditure for 2018-2019 by health board. Appendix 3 provides the primary care spend per 1,000 patients for each health board in 2018–2019. These data are reflective of the health board structure that was in place up to the end of March 2019. Further data updates will be reflective of the new health board structure introduced in April 2019.

All health boards and Velindre Trust will be expected to action this advice and put mechanisms in place to ensure these areas are reviewed, with direction given by Medical Directors working with their Chief Pharmacists. Where necessary, medicines management teams should work closely together with relevant specialist teams to ensure patients identified as part of these recommendations are supported appropriately.

As part of this process it is recommended that the formulary status of each of these items is reviewed and that the items are incorporated into the local Interventions Not Normally Used (INNU) policies. These items should not be routinely prescribed or initiated for any new patients unless this is specified in the recommendations or associated patient exemptions listed herein. Patients currently prescribed these items should be reviewed and switched to an alternative product where appropriate. Access

* As agreed at the November 2020 meeting of AWMSG, cyanocobalamin is no longer considered within the *Low Value for Prescribing in NHS Wales* initiative.

to these items outside of these recommendations should only be via the Individual Patient Funding Request (IPFR) process.

Resources to help support the implementation of these recommendations are detailed in Appendix 4.

Appendix 5 provides an overview of the progress made with the items contained within the *Low Value for Prescribing in NHS Wales* initiative's previous papers.

A dashboard hosted within the [Server for Prescribing Information Reporting and Analysis \(SPIRA\)](#), accessible to all users who are on the NHS Wales Network, provides more detailed analysis for the usage of items/item groups identified within the *Low Value for Prescribing in NHS Wales* initiative. Data within this paper, as indicated in Tables 1 and 2, have been sourced from either Comparative Analysis System for Prescribing Audit (CASPA) or PrescQIPP. Where PrescQIPP data has been utilised it has not been verified against the data that is also held within CASPA, therefore inconsistencies may exist.

RETIRED

Table 1. Items considered to be of low clinical effectiveness and therefore identified as low value for prescribing in NHS Wales and not recommended for routine prescribing

Recommendation rationale	NHS Wales expenditure 2018–2019
Chloral hydrate (cloral betaine) Explanation: Chloral hydrate is indicated for the short-term treatment of severe insomnia which is interfering with normal daily life and where other therapies have failed; as an adjunct to non-pharmacological therapies⁸. Chloral betaine is the active ingredient in the tablet form which is converted by the body to chloral hydrate, where 707mg chloral betaine is equivalent to 414mg chloral hydrate. Chloral hydrate/cloral betaine is classified within the British National Formulary as being less suitable for prescribing in insomnia⁹. It has a narrow therapeutic index and has been associated with patient fatalities¹⁰. The Medicines and Healthcare products Regulatory Agency (MHRA) provided a drug safety update on the use of chloral hydrate elixir in 2021. This stated that following a national review of safety and efficacy data, the paediatric indication for chloral hydrate/cloral betaine has been further restricted to only children and adolescents with a suspected or definite neurodevelopmental disorder where the benefits of short-term use outweigh any potential risk. Treatment should be for the shortest duration possible and should not exceed 2 weeks⁸. Recommendation: - Advise health boards that prescribers should not initiate chloral hydrate (cloral betaine) in primary care for any new patient. - Advise health boards that if, in exceptional circumstances, there is a clinical need for chloral hydrate (cloral betaine) to be prescribed, this should be undertaken in a cooperation arrangement with a multidisciplinary team and/or other healthcare professional. Patient exemptions: Must be initiated by a specialist, or in conjunction with a specialist, and is only indicated for short-term treatment.	£195,082 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

Recommendation rationale	NHS Wales expenditure 2018–2019
Minocycline for acne	
Explanation: Minocycline is a tetracycline antibiotic that is primarily used for the treatment of acne¹¹. However, a Cochrane review found that there is no evidence to support the use of one tetracycline over another in terms of efficacy for the treatment of acne vulgaris, and alternative once-daily products are available¹². This guidance does not apply to the other indications for which minocycline can be prescribed. However, there are various safety risks associated with the use of minocycline. The British National Formulary states that minocycline is less suitable for prescribing when compared with other tetracyclines, as it is associated with a greater risk of lupus-erythematosus-like syndrome and it sometimes causes irreversible pigmentation. It is also associated with hepatotoxicity and use for greater than six months requires monitoring every three months for this¹³. The evidence does not support the claim that the extended-release preparations are safer than the standard release preparations for the treatment of acne with minocycline¹². Recommendation: - Advise health boards that prescribers in primary care should not initiate minocycline for any new patient with acne. - Advise health boards to support prescribers in deprescribing minocycline in all patients with acne and, where appropriate, ensure the availability of relevant services to facilitate this change. Patient exemptions: No routine exceptions have been identified.	£28,227 (This figure is the expenditure in primary care as per PrescQIPP data)
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	
Probiotics	
Explanation: Probiotics are live micro-organisms that, when administered in adequate amounts, confer a health benefit on the host¹⁴. The Advisory Committee on Borderline Substances recently reviewed the probiotic products VSL#3® and Vivomixx™ and concluded that the evidence available did not sufficiently demonstrate that the products are clinically effective. Subsequently both products have been removed from the Drug Tariff¹⁵. Recommendation: Advise health boards that probiotics should not be prescribed in primary care due to limited evidence of clinical effectiveness. Patient exemptions: No exceptions have been identified.	£58,540 (This figure is the expenditure in primary care as per PrescQIPP data)
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

Recommendation rationale	NHS Wales expenditure 2018–2019
Rubefacients (excluding NSAIDs and capsaicin) Explanation: Rubefacients are topical preparations that cause irritation and reddening of the skin due to increased blood flow. They are used to relieve pain in various musculoskeletal conditions and are available on prescription and in over-the-counter remedies¹⁶. Rubefacients act by counter-irritation. Pain, whether superficial or deep-seated, is relieved by any method that itself produces irritation of the skin. Topical rubefacient preparations may contain nicotinate and salicylate compounds, essential oils, capsicum, and camphor. The evidence available does not support the use of topical rubefacients in acute or chronic musculoskeletal pain¹⁷. The National Institute for Health and Care Excellence (NICE) have issued the “Do not do” recommendation to not offer rubefacients for treating osteoarthritis¹⁸. Recommendation: - Advise health boards that prescribers in primary care should not initiate rubefacients (excluding topical non-steroidal anti-inflammatory drugs [NSAIDs] and capsaicin) for any new patient. - Advise health boards to support prescribers in deprescribing rubefacients (excluding topical non-steroidal anti-inflammatory drugs [NSAIDs] and capsaicin) in all patients and, where appropriate, ensure the availability of relevant services to facilitate this change. Patient exemptions: No routine exceptions have been identified.	
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	
Silk garments for eczema Explanation: Silk garments are typically prescribed for eczema or dermatitis. These products are knitted, medical-grade silk clothing which can be used as an adjunct to normal treatment for various forms of dermatitis, eczema and allergic skin conditions¹⁹. The evidence supporting the use of silk garments for eczema and atopic dermatitis is weak and of low quality¹⁹. A randomised controlled trial of silk therapeutic garments for the management of atopic eczema in children (the CLOTHES trial) concluded that the addition of silk garments to standard atopic eczema care is unlikely to improve severity, or to be cost-effective compared with standard care alone, for children with moderate or severe atopic eczema²⁰. Recommendation: - Advise health boards that prescribers in primary care should not initiate silk garments for any new patient with eczema. - Advise health boards to support prescribers in deprescribing silk garments in all patients and, where appropriate, ensure the availability of relevant services to facilitate this change. Patient exemptions: No routine exceptions have been identified.	
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

£196,259

(This figure is the expenditure in primary care as per PrescQIPP data)

£36,993

(This figure is the expenditure in primary care as per PrescQIPP data)

Recommendation rationale	NHS Wales expenditure 2018–2019
Vitamins and minerals There is insufficient high-quality evidence to demonstrate the clinical effectiveness of vitamins and minerals. Vitamins and minerals are essential nutrients which most people can and should get from eating a healthy, varied and balanced diet. In most cases, dietary supplementation is unnecessary. Many vitamin and mineral supplements are classified as foods and not medicines; they therefore do not have to go through the strict criteria laid down by the Medicines and Health Regulatory Authority (MHRA) to confirm their quality, safety and efficacy before reaching the market²¹. For the purpose of this paper not all vitamins and minerals prescribed within primary care are considered as suitable for inclusion. General exclusion criteria applied include vitamin D and calcium preparations, and products that are suitable for patients with medically diagnosed deficiency, and/or malnutrition. Patients suitable to receive Healthy Start vitamins for pregnancy or children between the ages six months to their fourth birthday are exempted from these recommendations. This is in keeping with the approach taken by NHS England in their guidance on the use of over the counter items from 2018²¹.	
Vitamins and minerals – Ascorbic acid Explanation: The Department of Health and Social Care recommends that people should be able to get all the vitamin C they need by eating a varied and balanced diet²². Ascorbic acid (vitamin C) tablets are indicated for the prevention and treatment of scurvy²³. Epidemiologic data have shown a correlation between dietary and supplemental vitamin C intake and oxalate kidney stones in men, especially at high doses. Therefore, routine supplementation in men and any patients with a predisposition to form oxalate stones is not recommended²⁴. Although there is some evidence to indicate a minor benefit in using ascorbic acid in the prevention and treatment of the common cold, routine supplementation cannot be justified²⁵. Vitamin C supplementation has also been associated with a reduced risk of cardiovascular disease, however there is currently no evidence to support this²⁶. Recommendation: Advise health boards that prescribers in primary care should not initiate ascorbic acid tablets for any new patient. Patient exemptions: Medically diagnosed deficiency, including for those patients who may have a lifelong or chronic condition or have undergone surgery that results in malabsorption. However, continuing need should be reviewed on a regular basis. Use of ascorbic acid to prevent and/or treat scurvy.	
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

£147,792
(This figure is the expenditure in primary care as per CASPA data [NWSSP])

Recommendation rationale	NHS Wales expenditure 2018–2019
Vitamins and minerals – Ketovite®	
Explanation: Ketovite® is a branded preparation of vitamins with minerals and trace elements. It is available in two forms; liquid and tablets. Both forms are indicated for the prevention of vitamin deficiency in disorders of carbohydrate or amino acid metabolism; and as an adjunct in restricted, specialised, or synthetic diets²⁷. However, the two forms contain different ingredients with the manufacturer recommending that, in order to achieve complete vitamin supplementation, Ketovite® liquid should be used in conjunction with Ketovite® tablets²⁸. Ketovite® liquid contains cyanocobalamin (vitamin B₁₂). Current guidance states there is no justification for prescribing multiple-ingredient vitamin preparations containing vitamin B₁₂²⁹. Recommendation: Advise health boards that prescribers in primary care should not initiate Ketovite® tablets or liquid for any new patient. Patient exemptions: Medically diagnosed deficiency, including for those patients who may have a lifelong or chronic condition or have undergone surgery that results in malabsorption. However, continuing need should be reviewed on a regular basis.	£19,996 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	
Vitamins and minerals – Selenium	
Explanation: Selenium deficiency can occur as a result of inadequate diet or prolonged parenteral nutrition³⁰. Good dietary sources of selenium are seafood, kidney and liver³¹. A selenium supplement should not be given unless there is good clinical evidence of deficiency³⁰. A 2018 Cochrane review concluded that, although there have been well-designed and well-conducted randomised controlled trials investigating selenium supplements for reducing cancer risk, there has been no beneficial effect demonstrated³². A Cochrane review from 2013 reported that the limited trial evidence available did not support the use of selenium supplements in the primary prevention of cardiovascular disease³³. A separate Cochrane review in the same year found that the objective evidence is insufficient to support the use of selenium supplementation for the treatment of patients with Hashimoto's thyroiditis³⁴. Selenium has been suggested as having a role in protecting against overwhelming tissue damage and infection in critically ill adults. However, a Cochrane review from 2004, which was updated in 2015, concluded that the evidence supporting supplementation in these patients is disputable³⁵. Recommendation: Advise health boards that prescribers in primary care should not initiate selenium for any new patient. Patient exemptions: Supplementation in patients requiring total parenteral nutrition. Medically diagnosed deficiency, including for those patients who may have a lifelong or chronic condition or have undergone surgery that results in malabsorption. Continuing need should however be reviewed on a regular basis.	£17,004 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

Table 2. Items considered to be clinically effective but with more cost-effective options being available and therefore identified as low value for prescribing in NHS Wales and not recommended for routine prescribing

Recommendation rationale	NHS Wales expenditure 2018–2019
Alimemazine Explanation: Alimemazine is a sedating antihistamine used for urticaria or pruritus. There is no published literature available to state that alimemazine is superior to other sedating antihistamines³⁶. However, alternative first generation antihistamines, such as chlorphenamine or promethazine, offer a more cost-effective option. Pricing from the August 2019 online Drug Tariff states that a box of 28 tablets of alimemazine costs £112.88, compared to 28 tablets of chlorphenamine costing just 78p³⁷. Recommendation: - Advise health boards that prescribers in primary care should not initiate alimemazine for any new patient. - Advise health boards to support prescribers in deprescribing alimemazine in all patients and, where appropriate, ensure the availability of alternative treatment options. Patient exemptions: As a premedication to anaesthesia in children 2 to 6 years old³⁸.	£436,317 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	
Aliskiren Explanation: Aliskiren is a renin inhibitor which inhibits renin directly; renin converts angiotensinogen to angiotensin. It is indicated for essential hypertension either alone or in combination with other antihypertensives³⁹. From a review of evidence in 2011, NICE stated that there is insufficient evidence of the effectiveness of aliskiren to determine its suitability for use in resistant hypertension⁴⁰. Whilst aliskiren has shown comparable efficacy to other antihypertensive agents in terms of blood pressure reduction, its effects on mortality and long-term morbidity are currently unknown⁴¹. AWMSG guidance states that aliskiren is not recommended for use within NHS Wales for the treatment of essential hypertension as the clinical and cost effectiveness data presented was insufficient for AWMSG to recommend its use⁴². A Medicines and Healthcare products Regulatory Agency (MHRA) Drug Safety Update reported that when aliskiren is combined with ACE inhibitors or angiotensin receptor blockers, especially in diabetic patients and those with impaired renal function, there is a risk of adverse outcomes such as hypotension, syncope, stroke, hyperkalaemia and changes in renal function including acute renal failure. Further recommendations were made by the MHRA, that for all patients where aliskiren treatment is continued or initiated, estimated glomerular filtration rate (eGFR) and glucose tolerance should be monitored at appropriate intervals⁴³. Recommendation: - Advise health boards that prescribers in primary care should not initiate aliskiren for any new patient. - Advise health boards to support prescribers in deprescribing aliskiren in all patients and, where appropriate, ensure the availability of relevant services to facilitate this change. Patient exemptions: No routine exceptions have been defined.	£33,027 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

Recommendation rationale	NHS Wales expenditure 2018–2019
Blood glucose testing strips Explanation: The intention of this recommendation is not for patients to be deprescribed blood glucose testing strips or not initiated on them. It is intended to encourage health boards and prescribers to consider more cost-effective alternatives. There are currently over 40 different types of blood glucose testing strips available in the UK. They range in price from £5.45 to £16.40 per 50 strips³⁷, therefore promoting use of more cost-effective testing strips first line will enable savings to be made whilst not affecting patient care. In 2018–2019, approximately 62% of the total spend on blood glucose testing strips in primary care was on those costing greater than £10 for 50 strips^{37,44}. Rationalising the number of readily available meters and testing strips also facilitates improved education of healthcare professionals in their use, who in turn can better assist patients with their testing. NICE guidance outlines specific criteria for when self-monitoring of blood glucose may be suitable in patients with type 2 diabetes⁴⁵. Recommendation: In patients with type 2 diabetes: • Advise health boards that prescribers in primary care should not initiate blood glucose testing strips that cost greater than £10 for 50 strips for any new patient. • Advise health boards to support prescribers in deprescribing blood glucose testing strips that cost greater than £10 for 50 strips and where appropriate, ensure the availability of relevant services to facilitate this change. Patient exemptions: Patients with type 2 diabetes who have been trained in carbohydrate counting and utilise an appropriate carbohydrate counting meter.	£10,250,398 (This figure is the expenditure in primary care as per CASPA data [NWSSP])
The guidance contained herein does not remove the clinical discretion of the prescriber in accordance with their professional duties.	

REFERENCES

1. Hurst L MK, Pluddemann A, Lewis S, Harvey K, Briggs A, Boyle A, Bajwa R, Haire K, Entwistle A, Handa A and Heneghan C. Defining Value-based Healthcare in the NHS. *Centre for Evidence-based Medicine, University of Oxford*. 2019. Available at: https://www.cebm.net/wp-content/uploads/2019/04/Defining-Value-based-healthcare-in-the-NHS_201904.pdf. Accessed June 2021.
2. Expert Panel on effective ways of investing in Health (EXPH). Defining Value in "Value-based Healthcare" *European Commission*. 2019. Available at: https://ec.europa.eu/health/sites/default/files/expert_panel/docs/024_defining-value-vbhc_en.pdf. Accessed June 2021.
3. All Wales Medicines Strategy Group. Medicines Identified as Low Priority for Funding in NHS Wales - Paper 1. 2018. Available at: <http://www.awmsg.org/awmsgonline/docs/awmsg/medman/Medicines%20Identified%20as%20Low%20Priority%20for%20Funding%20in%20NHS%20Wales.pdf>. Accessed January 2020.
4. All Wales Medicines Strategy Group. Medicines Identified as Low Priority for Funding - Paper 2. 2018. Available at: <http://www.awmsg.org/awmsgonline/docs/awmsg/medman/Medicines%20Identified%20as%20Low%20Priority%20for%20Funding%20in%20NHS%20Wales%20-%20Paper%202.pdf>. Accessed January 2020.
5. Welsh Government. A Healthier Wales: our Plan for Health and Social Care. 2018. Available at: <https://www.basw.co.uk/system/files/resources/180608healthier-wales-mainen.pdf>. Accessed June 2021.
6. NHS England and NHS Improvement. Items which should not routinely be prescribed in primary care: Guidance for CCGs. 2019. Available at: <https://www.england.nhs.uk/wp-content/uploads/2019/08/items-which-should-not-routinely-be-prescribed-in-primary-care-v2.1.pdf>. Accessed January 2020.
7. PrescQIPP. About PrescQIPP. 2019. Available at: <https://www.prescqipp.info/about-prescqipp/>. Accessed January 2020.
8. Medicines and Healthcare products Regulatory Agency. Chloral hydrate, cloral betaine (Welldorm): restriction of paediatric indication. 2021. Available at: <https://www.gov.uk/drug-safety-update/chloral-hydrate-cloral-betaine-welldorm-restriction-of-paediatric-indication>. Accessed March 2022.
9. British National Formulary. Chloral hydrate. 2019. Available at: <https://bnf.nice.org.uk/drug/chloral-hydrate.html>. Accessed January 2020.
10. Institute for Safe medication Practices. Chloral Hydrate: Is it still being used? Are there safer alternatives? 2016. Available at: <https://www.ismp.org/resources/chloral-hydrate-it-still-being-used-are-there-safer-alternatives>. Accessed January 2020.
11. National Institute for Health and Care Excellence. Key Therapeutic Topic: Minocycline. 2015. Available at: <https://www.nice.org.uk/advice/ktt11/resources/minocycline-pdf-58757947696069>. Accessed January 2020.
12. Garner S, Eady A, Bennett C et al. Minocycline for acne vulgaris: efficacy and safety. *Cochrane Database of Systematic Reviews*. 2012. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002086.pub2/full>. Accessed January 2020.
13. British National Formulary. Minocycline. 2019. Available at: <https://bnf.nice.org.uk/drug/minocycline.html>. Accessed January 2020.
14. Hill C, Guarner F, Reid G et al. The International Scientific Association for Probiotics and Prebiotics consensus statement on the scope and appropriate use of the term probiotic. *Nature Reviews Gastroenterology & Hepatology*. 2014;11:506-514. Available at: <https://www.nature.com/articles/nrgastro.2014.66>. Accessed January 2020.

15. UK Medicines Information. Probiotics VSL#3 and Vivomixx have been removed from the Drug Tariff, following review by Advisory Committee on Borderline Substances (ACBS). 2019. Available at: <https://www.medicinesresources.nhs.uk/en/Medicines-Awareness/Guidance-and-Advice/Drug-Prescribing/Probiotics-VSL3-and-Vivomixx-have-been-removed-from-the-Drug-Tariff-following-review-by-Advisory-Committee-on-Borderline-Substances-ACBS/>. Accessed January 2020.
16. Derry S, Matthews P, Wiffen P et al. Salicylate-containing rubefacients for acute and chronic musculoskeletal pain in adults. *Cochrane Database of Systematic Reviews*. 2014. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007403.pub3/full>. Accessed January 2020.
17. British National Formulary. Soft-tissue disorders. 2019. Available at: <https://bnf.nice.org.uk/treatment-summary/soft-tissue-disorders.html>. Accessed January 2020.
18. National Institute for Health and Care Excellence. Do Not Do Recommendation: Do not offer rubefacients for treating osteoarthritis. 2014. Available at: <https://www.nice.org.uk/donotdo/do-not-offer-rubefacients-for-treating-osteoarthritis>. Accessed January 2020.
19. PrescQIPP. Bulletin 160: Silk and antimicrobial garments. 2017. Available at: <https://www.prescqipp.info/our-resources/bulletins/bulletin-160-silk-and-antimicrobial-garments/>. Accessed January 2020.
20. Thomas K, Bradshaw L, Sach T et al. Randomised controlled trial of silk therapeutic garments for the management of atopic eczema in children: the CLOTHES trial. *National Institute for Health Research*. 2017. Available at: <https://www.journalslibrary.nihr.ac.uk/hta/hta21160/#/abstract>. Accessed January 2020.
21. NHS England. Conditions for which over the counter items should not routinely be prescribed in primary care: Guidance for CCGs. 2018. Available at: <https://www.england.nhs.uk/wp-content/uploads/2018/03/otc-guidance-for-ccgs.pdf>. Accessed January 2020.
22. NHS website. Vitamin C. 2017. Available at: <https://www.nhs.uk/conditions/vitamins-and-minerals/vitamin-c/>. Accessed January 2020.
23. British National Formulary. Ascorbic acid (Vitamin C). 2019. Available at: <https://bnf.nice.org.uk/drug/ascorbic-acid.html>. Accessed January 2020.
24. Pazirandeh S and Burns D. Overview of water-soluble vitamins. 2019. Available at: <https://www.uptodate.com/contents/overview-of-water-soluble-vitamins>. Accessed January 2020.
25. Hemila H and Chalker E. Vitamin C for preventing and treating the common cold. *Cochrane Database of Systematic Reviews*. 2013. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000980.pub4/full?highlightAbstract=acid%7Cascorbic%7Cascorb>. Accessed January 2020.
26. Al-Khudairy L, Flowers N, Wheelhouse R et al. Vitamin C supplementation for the primary prevention of cardiovascular disease. *Cochrane Database of Systematic Reviews*. 2017. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011114.pub2/full?highlightAbstract=acid%7Cascorbic%7Cascorb>. Accessed January 2020.
27. British National Formulary. Vitamins with minerals and trace elements. 2019. Available at: <https://bnf.nice.org.uk/drug/vitamins-with-minerals-and-trace-elements.html#indicationsAndDoses>. Accessed January 2020.
28. Essential Pharmaceuticals Ltd. Ketovite Liquid. Summary of Product Characteristics. 2015. Available at: <https://www.medicines.org.uk/emc/product/1051/smpc>. Accessed January 2020.

29. British National Formulary. Megaloblastic anaemia. 2019. Available at: <https://bnf.nice.org.uk/treatment-summary/anaemia-megaloblastic.html>. Accessed January 2020.
30. British National Formulary. Selenium deficiency. 2019. Available at: <https://bnf.nice.org.uk/treatment-summary/selenium-deficiency.html>. Accessed January 2020.
31. Pazirandeh S, Burns D, and Griffin I. Overview of dietary trace minerals. 2019. Available at: <https://www.uptodate.com/contents/overview-of-dietary-trace-elements>. Accessed January 2020.
32. Vinceti M, Filippini T, Giovane C et al. Selenium for preventing cancer. *Cochrane Database of Systematic Reviews*. 2018. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005195.pub4/full?highlightAbstract=selenium%7Cwithdrawn>. Accessed January 2020.
33. Rees K, Hartley L, Day C et al. Selenium supplementation for the primary prevention of cardiovascular disease. *Cochrane Database of Systematic Reviews*. 2013. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009671.pub2/full?highlightAbstract=selenium%7Cwithdrawn>. Accessed January 2020.
34. van Zuuren E, Albusta A, Fedorowicz Z et al. Selenium supplementation for Hashimoto's thyroiditis. *Cochrane Database of Systematic Reviews*. 2013. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010223.pub2/full?highlightAbstract=selenium%7Cwithdrawn>. Accessed January 2020.
35. Allingstrup M, and Afshari A. Selenium supplementation for critically ill adults. *Cochrane Database of Systematic Reviews*. 2015. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003703.pub3/full?highlightAbstract=selenium%7Cwithdrawn>. Accessed January 2020.
36. Waltham Forest Clinical Commissioning Group. Position Statement on Alimemazine. 2017. Available at: <http://www.walthamforestccg.nhs.uk/downloads/ourwork/Medicines-optimisation/Medicines-guidelines/Respiratory/Alimemazine.pdf> Accessed January 2020.
37. NHS Business Services Authority. Drug Tariff September 2019. 2019. Available at: <http://www.drugtariff.nhsbsa.nhs.uk/#/00730181-DC/DC00729671/Part%20IXR%20-%20Chemical%20Reagents%20>. Accessed January 2020.
38. British National Formulary. Alimemazine tartrate. 2019. Available at: <https://bnfc.nice.org.uk/drug/alimemazine-tartrate.html>. Accessed January 2020.
39. British National Formulary. Aliskiren. 2019. Available at: <https://bnf.nice.org.uk/drug/aliskiren.html>. Accessed January 2020.
40. National Institute for Health and Care Excellence. Hypertension: the clinical management of primary hypertension in adults - Clinical Guideline 127 (Methods, evidence and recommendations). 2011. Available at: <https://www.nice.org.uk/guidance/ng136/evidence/full-guideline-pdf-6898565198>. Accessed January 2020.
41. Scottish Medicines Consortium. Aliskiren 150mg and 300mg film-coated tablets (Rasilez). SMC Advice No. 462/08. 2010. Available at: https://www.scottishmedicines.org.uk/media/1229/aliskiren_rasilez_resubmission_final_january_2010_for_website.pdf. Accessed January 2020.
42. All Wales Medicines Strategy Group. Aliskiren (Rasilez®) 2009. Available at: <http://www.awmsg.org/awmsgonline/app/appraisalinfo/18>. Accessed January 2020.
43. Medicines and Healthcare products Regulatory Agency. Aliskiren (Rasilez®): risk of cardiovascular and renal adverse reactions. 2014. Available at: <https://www.gov.uk/drug-safety-update/aliskiren-rasilez-risk-of-cardiovascular-and-renal-adverse-reactions>. Accessed January 2020.

44. NHS Wales Shared Services Partnership. Comparative Analysis System for Prescribing Audit (CASPA). 2022. Accessed February 2022.
45. National Institute for Health and Care Excellence. NICE Guideline 28. Type 2 diabetes in adults: management. 2019. Available at: <https://www.nice.org.uk/guidance/ng28/chapter/1-Recommendations#self-monitoring-of-blood-glucose>. Accessed January 2020.

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APPENDIX 1. CLASSIFICATION CRITERIA FOR ITEMS/ITEM GROUPS IDENTIFIED AS LOW VALUE FOR PRESCRIBING IN NHS WALES

Table 3. Classification criteria for inclusion of items/item groups within phase 3 of the Low Value for Prescribing in NHS Wales initiative.

Low value item	Items of low clinical effectiveness	Items where more cost-effective alternatives are available
Alimemazine		✓
Aliskiren	✓	✓
Blood glucose testing strips		✓
Chloral hydrate and cloral betaine*	✓	
Minocycline*	✓	
Probiotics	✓	
Rubefaciants	✓	
Silk garments	✓	
Vitamins and minerals	✓	
* These items have also been identified due to specific patient safety concerns associated with their use		

APPENDIX 2. PRIMARY CARE EXPENDITURE ON THE ITEMS/ITEM GROUPS IDENTIFIED AS LOW VALUE FOR PRESCRIBING IN NHS WALES PER HEALTH BOARD IN 2018–2019

Table 4. Primary care expenditure on the items/item groups identified as low value for prescribing in NHS Wales per health board in 2018–2019

Low value item	ABMU	Aneurin Bevan	BCU	Cardiff and Vale	Cwm Taf	Hywel Dda	Powys
Alimemazine	£187,199	£17,559	£88,821	£40,500	£22,210	£51,724	£28,304
Aliskiren	£3,410	£5,703	£3,454	£5,655	£6,088	£6,890	£1,827
Ascorbic acid	£26,236	£25,325	£19,140	£17,147	£30,657	£16,667	£12,620
Blood glucose testing strips	£1,579,576	£1,700,896	£2,723,810	£1,340,751	£965,704	£1,465,199	£474,462
Chloral hydrate and Cloral betaine	£13,481	£78,440	£32,278	£16,306	£20,177	£23,546	£10,855
Ketovite	£4,694	£3,869	£2,933	£2,881	£3,086	£2,119	£415
Minocycline for acne	£3,615	£3,410	£5,702	£5,836	£3,247	£6,040	£377
Probiotics	£20,193	£12,160	£1,811	£12,080	£1,821	£5,897	£4,578
Rubefacients (excluding topical NSAIDs and capsaicin)	£27,835	£21,270	£60,541	£24,785	£27,642	£26,791	£7,395
Selenium	£5,762	£2,809	£3,353	£3,651	£1,110	£256	£63
Silk garments	£1,369	£352	£25,310	£1,867	£158	£3,262	£4,674

APPENDIX 3. PRIMARY CARE EXPENDITURE PER 1,000 PATIENTS ON THE ITEMS/ITEM GROUPS IDENTIFIED AS LOW VALUE FOR PRESCRIBING IN NHS WALES PER HEALTH BOARD IN 2018–2019

Table 5. Primary care expenditure per 1,000 patients on the items/item groups identified as low value for prescribing in NHS Wales per health board in 2018–2019

Low value item	ABMU	Aneurin Bevan	BCU	Cardiff and Vale	Cwm Taf	Hywel Dda	Powys
Alimemazine	£336	£28.67	£125	£78.04	£72.43	£131	£203
Aliskiren	£6.12	£9.31	£5.00	£10.90	£19.85	£17.49	£13.13
Ascorbic acid	£47.09	£41.35	£26.98	£33.04	£99.99	£42.30	£90.68
Blood glucose testing strips	£2,835	£2,777	£3,839	£2,584	£3,150	£3,719	£3,409
Chloral hydrate and Chloral betaine	£24.20	£128	£45.49	£31.42	£65.81	£59.76	£78.00
Ketovite	£8.43	£6.32	£4.13	£5.55	£10.07	£5.38	£2.98
Minocycline for acne	£6.56	£5.58	£8.04	£11.35	£10.59	£15.42	£2.71
Probiotics	£36.68	£19.91	£2.55	£23.49	£5.94	£15.05	£32.87
Rubefacients (excluding topical NSAIDs and capsaicin)	£50.56	£34.82	£85.40	£48.19	£90.16	£68.40	£53.10
Selenium	£10.34	£4.59	£4.73	£7.03	£3.62	£0.65	£0.45
Silk garments	£2.49	£0.58	£35.70	£3.62	£0.52	£8.33	£33.56

APPENDIX 4. SUPPORTING INFORMATION FOR IMPLEMENTATION OF THE RECOMMENDATIONS

1. Chloral hydrate and cloral betaine

- <https://www.gov.uk/drug-safety-update/chloral-hydrate-welldorm-and-triclofos>
- <https://bnf.nice.org.uk/drug/chloral-hydrate.html>

2. Minocycline for acne

- <https://cks.nice.org.uk/acne-vulgaris#!prescribinginfosub:10>
- <https://www.prescqipp.info/items-which-should-not-routinely-be-prescribed-patient-leaflets>
- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002086.pub2/full>

3. Probiotics

- <https://www.prescqipp.info/our-resources/bulletins/bulletin-82-probiotics/>
- <https://www.nice.org.uk/guidance/cg84>
- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321891/Clostridium_difficile_management_and_treatment.pdf

4. Rubefacients

- <https://www.prescqipp.info/media/1639/b114-rubefacients-21.pdf>
- <https://bnf.nice.org.uk/treatment-summary/soft-tissue-disorders.html>
- <https://www.prescqipp.info/our-resources/webkits/drop-list/low-value-medicines-lvm/patient-information-pdf-versions/>
- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007403.pub3/full>
- <https://www.nice.org.uk/donotdo/do-not-offer-rubefacients-for-treating-osteoarthritis>

5. Silk garments

- <https://www.england.nhs.uk/publication/items-which-should-not-be-routinely-prescribed-in-primary-care-evidence-reviews/>
- <https://www.prescqipp.info/our-resources/bulletins/bulletin-160-silk-and-antimicrobial-garments/>
- <https://www.prescqipp.info/our-resources/webkits/drop-list/low-value-medicines-lvm/patient-information-pdf-versions/>
- <https://www.journalslibrary.nihr.ac.uk/hta/hta21160/#/abstract>

6. Vitamins and minerals

- <https://www.healthystart.nhs.uk/healthy-start-vouchers/healthy-start-vitamins/>
- <http://www.nhs.uk/chq/pages/1122.aspx>
- https://www.nhs.uk/news/2011/05May/Documents/BtH_supplements.pdf
- <https://www.prescqipp.info/our-resources/bulletins/bulletin-107-vitamins-and-minerals-drop-list/>

a. Ascorbic acid

- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000980.pub4/full?highlightAbstract=acid%7Cascorbic%7Cascorb>
- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011114.pub2/full?highlightAbstract=acid%7Cascorbic%7Cascorb>

b. Ketovite

- <https://www.medicines.org.uk/emc/productketoviteliquid/1051/smpc>
- <https://www.medicines.org.uk/emc/productketovitetablets/1052/smpc>

c. Selenium

- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005195.pub4/full?highlightAbstract=selenium%7Cwithdrawn>
- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009671.pub2/full?highlightAbstract=selenium%7Cwithdrawn>

- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010223.pub2/full?highlightAbstract=selenium%7Cwithdrawn>
- <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003703.pub3/full?highlightAbstract=selenium%7Cwithdrawn>

7. Alimemazine

- <https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff>

8. Aliskiren

- <https://www.nice.org.uk/guidance/cg127/evidence>
- <https://www.gov.uk/drug-safety-update/aliskiren-rasilez-risk-of-cardiovascular-and-renal-adverse-reactions>

9. Blood glucose testing strips

- <https://www.nice.org.uk/guidance/ng28/chapter/1-Recommendations#self-monitoring-of-blood-glucose>

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APPENDIX 5. TOTAL SPEND AND DIFFERENCE IN SPEND ON THE PREVIOUSLY ENDORSED MEDICINES IDENTIFIED AS LOW VALUE FOR PRESCRIBING IN NHS WALES PER HEALTH BOARD FOR 2017–2018 AND 2018–2019

Table 6. Total spend and difference in spend on the previously endorsed medicines identified as low value for prescribing in NHS Wales per health board for 2017–2018 and 2018–2019

	ABMU	Aneurin Bevan	BCU	Cardiff and Vale	Cwm Taf	Hywel Dda	Powys
Total spend 2017–2018	£1,128,700	£1,092,124	£864,302	£924,303	£618,893	£1,056,320	£305,658
Total spend 2018–2019	£852,052	£884,279	£738,259	£677,994	£599,225	£874,282	£244,353
Difference	-£276,647	-£207,845	-£126,043	-£246,309	-£19,668	-£182,037	-£61,305