

# MID WALES PHARMACY PROVISION

---



2025

---



IECHYD A GOFAL GWLEDIG CYMRU  
RURAL HEALTH AND CARE WALES

---

## Table of Contents

<b>1.</b>	<b>Introduction</b> .....	<b>4</b>
	1.1. Introduction.....	4
	1.2. Defining Mid Wales .....	5
<b>2.</b>	<b>Background</b> .....	<b>5</b>
<b>3.</b>	<b>Current Pharmacy Provision</b> .....	<b>7</b>
	3.1. Pharmacy Provision across the UK.....	7
	3.1.1. Common Ailments Scheme.....	7
	3.1.2. Discharge Medicines Review.....	9
	3.1.3. Other Services.....	9
	3.1.4. Economic Impact.....	10
	3.1.5. Employment and Demographic Impact .....	10
	3.1.6. UK Pharmacy Locations .....	11
	3.1.7. Challenges Faced within UK Pharmacy.....	11
	3.2. Pharmacy Provision across Wales.....	12
	3.2.1. Number of Pharmacies in Wales.....	12
	3.2.2. Population per Pharmacy .....	13
	3.2.3. Pharmacy Services in Wales .....	14
	3.2.4. Pharmacy Chains in Wales.....	15
	3.2.5. Pharmacy Training in Wales.....	16
	3.3. Pharmacy Provision across Mid Wales .....	17
	3.3.1. Pharmacy Locations and Chains in Mid Wales.....	17
	3.3.2. Mid Wales Pharmacies per Square Mile.....	19
	3.3.3. Pharmacy Services in Mid Wales.....	19
	3.3.4. Mid Wales Pharmacy Opening Hours .....	22
	3.3.5. Mid Wales Pharmacy Training.....	23
<b>4.</b>	<b>Best Practice in Pharmacy Provision</b> .....	<b>24</b>
	4.1. Examples of International Best Practice.....	24
	4.1.1. Best Practice Example 1: Pharmacist-delivered patient-centred health care model (PCHC) - Ross & Bloodworth (2003) .....	24

4.1.2. Best Practice Example 2: Cloud-based prescription review - Liu et al. (2020).....	25
4.1.3. Best Practice Example 3: Telepharmacy - Poudel & Nissen (2016) .....	26
4.1.4. Best Practice Example: 4 Rural Pharmacy Workforce Retention - Terry et al. (2024) .....	28
4.2. Challenges facing the Pharmacy Workforce.....	29
<b>5. Conclusion and Recommendations .....</b>	<b>31</b>
5.1. What is the pharmacy provision in Mid Wales and across the UK? .....	31
5.2. What models of best practice in the delivery of pharmacy services in rural areas can be identified?.....	32
5.3. What models of best practice in the delivery of pharmacy services could potentially be adopted across Mid Wales? .....	33
5.4. Recommendations for Mid Wales.....	34
5.4.1. Recommendation One: Implement a Cloud-Based Prescription Management System across Mid Wales.....	34
5.4.2. Recommendation Two: Expand Telepharmacy and Accelerate the Rollout of Electronic Prescription Services.....	35
5.4.3. Recommendation Three: Strengthen Rural Pharmacy Workforce through Targeted Recruitment, Training Opportunities, and Staff Wellbeing Support.....	36
5.4.4. Recommendation Four: Enhance Information and Innovation .....	36
<b>6. References.....</b>	<b>38</b>

## Figures

Figure 1. Map of the Mid Wales Region (RHCW).....	5
Figure 2. Top pharmacies in the UK.....	11
Figure 3. Bar graph of the population covered by a single pharmacy location in localities under each health board.....	14
Figure 4. Top pharmacies in Wales' Health Board Localities.....	15

---

Figure 5. Bar graph of the type of pharmacy chains in Mid Wales .....	18
Figure 6. Pharmacy locations across Mid Wales .....	19
Figure 7. The number of Mid Wales pharmacies offering specific services .....	22
Figure 8. Need for actions as stated by the RPS (Dineshwori, 2025; RPS, 2025) .....	30
Figure 9. Pharmacies using EPS in Mid Wales.....	35

## Tables

Table 1. Number of pharmacies across the UK in 2024 (General Pharmaceutical Council, 2025; Department of Health, 2024).....	7
Table 2. Number of pharmacies across Wales in 2025 characterized by Health Board and Locality (SSP, 2025a) .....	13

---

## 1. Introduction

This report will review the pharmacy provision across Mid Wales and will scope international best practices in the delivery of these services in rural areas, with the intent of identifying whether these could potentially be adopted across Mid Wales.

Concern was raised regarding closure of multiple pharmacies across the Mid Wales region at a Rural Health and Care Wales Stakeholder meeting held in 2023, thus the intent to review the pharmacy provision across Mid Wales was listed as an activity on the Rural Health and Care Wales (RHCW) Work Programme for 2024/25 and 2025/26; the RHCW Work Programme aligns with the strategic priorities of the Mid Wales Joint Committee for Health and Care (MWJC).

### 1.1. Research Questions

To successfully explore and determine best models of practice with regard to pharmacy provision in rural areas and to identify whether these could potentially be adopted across Mid Wales, the report will aim to answer the following research question and sub research questions:

**RESEARCH QUESTION: What is the current pharmacy provision across Mid Wales and how can this be improved?**

To address this research question, the following will be addressed:

- i. What is the pharmacy provision in Mid Wales and across the UK?
- ii. What models of best practice in the delivery of pharmacy services in rural areas can be identified?
- iii. What models of best practice in the delivery of pharmacy services could potentially be adopted across Mid Wales?

This review of pharmacy provision across Mid Wales and identification of international best practice for the delivery of these services in rural areas will be reported to the RHCW Stakeholder Group and the MWJC to suggest possible ways to improve pharmacy provision in Mid Wales.

The report chronicles a desk-top review of publicly available data, literature and reports that were available as of April 2025.

## 1.2. Defining Mid Wales

RHCW has defined the Mid Wales region as being the region between the arc that connects Barmouth in the Northwest to Welshpool in the Northeast, and down to the arc in the South that connects Cardigan to the West, across to Llandovery and then onto Builth Wells in the East. This region covers the county areas of Ceredigion, South Gwynedd (Meirionnydd) and North and Mid Powys.

It is the pharmacy provision in these areas that are analysed within this report alongside scoping international best practices that could aid in improving pharmacy services offered across Mid Wales.

**Figure 1**  
*Map of the Mid Wales Region (RHCW)*



This report will focus on community-based pharmacies and excludes hospital pharmacies and dispensing GP surgeries.

## 2. Background

This section of the report will outline the development and provision of pharmacy services.

Pharmacy is concerned with all aspects of the preparation and use of medicines, from the discovery of their active ingredients to how they are used (Anderson, 2005). The modern history of British pharmacy begins with the foundation of the Pharmaceutical Society of Great Britain in 1841 leading to the Pharmacy and Poisons Act of 1868 which stated it shall be unlawful for any person, excluding corporate bodies, to sell or keep open shop for retailing, dispensing or compounding medicines and assuming the title of chemist or pharmacist (Anderson, retrieved April 2025). Therefore, the 19th century marked the rise of pharmaceutical companies, which began mass-producing medications, where the discovery of more medicines and the shift from handcrafted remedies to standardised, commercially produced drugs revolutionised medicine by enhancing accessibility and reliability (Anderson, 2005).

Pharmacy has then strived for greater professional status throughout the modern era in the 20th century as three- and four-year degrees were quickly becoming the norm for pharmacy education, however no information on disease diagnosis and treatment was available at the time to avoid 'counter-prescribing' of medications to treat illnesses without a physician's prescription (Urick & Meggs, 2019). Yet, over time, this was seen as undermining pharmacy's professionalism and acknowledged the increasing conflict between pharmacist's roles as healthcare professionals and distributors of mass-produced medicines. This led to a further change in pharmacy education which re-emphasized the practice component of pharmacy education rather than only a theory-based training in basic science (Urick & Meggs, 2019). This meant that by the 1950s, a pharmacist's professional status was also defined by patient-care

---

services – rather than just dispensing medicines, as the Doctor of Pharmacy degree now supported the training needed to provide robust patient care services. These modifications laid the groundwork for further developments in the 1980s that would strengthen the idea that community chemists had a duty to their patients that went beyond merely delivering medication (Urick & Meggs, 2019).

Today, with increased pressures on General Practitioners (GPs) and the National Health Service (NHS), pharmacists and pharmacies are stepping up to play a more prominent role in delivering healthcare. As such, the Welsh Pharmaceutical Committee (WPC) was created as a statutory advisory committee that advises the Welsh Government on matters relating to pharmacy and the pharmaceutical profession (WPC, 2019). As a result of the collaboration between the committee and stakeholders to develop a future for the roles of pharmacy professionals and how to maximise their use, the publication 'Pharmacy: Delivering a Healthier Wales' was released, where they aim to design pharmacy services solely around patient needs by 2030 by enhancing patient experience, developing the workforce, facilitating seamless pharmaceutical care and harnessing innovation and technology (WPC, 2019).

Additionally, initiatives such as the 'Pharmacy First' service, seen in England and Scotland, enables patients to be referred into community pharmacies for a minor illness or an urgent repeat medicine supply (NHS England, retrieved May 2025). The Pharmacy First service enables community pharmacies to follow a robust clinical pathway which includes self-care and safety-netting and, only if appropriate, supplying a restricted set of prescription only medicines without the need to visit a GP (NHS England, retrieved May 2025). Therefore, the service expects to free up GP appointments for patients who need them most and will give people quicker and more convenient access to safe and high-quality healthcare.

Similarly, the 'Choose Pharmacy' scheme in Wales supports community pharmacies to provide services for patients (Digital Health and Care Wales, retrieved February 2025). The web-based programme by Digital Health and Care Wales gives users access to several modules that facilitate the provision of sophisticated and improved community pharmacy services offered by the NHS (Digital Health and Care Wales, 2025). Accredited community pharmacies and pharmacists can currently do the following with the Choose Pharmacy App:

- Consult and cure a specified set of 27 common ailments (see p. 7) and where possible, electronically send consultation summary letters to GPs
- Assist an electronic Discharge Medicines Review (DMR)
- Give the Emergency Medicines Supply (EMS) service access to the Welsh GP Record (WGPR) so they may see the medication history of NHS Wales patients
- Provide the seasonal influenza vaccination and document adverse drug reactions where needed
- Make the WGPR available to the Independent Prescribing service
- Deliver the emergency contraceptive service

### 3. Current Pharmacy Provision

#### 3.1. Pharmacy Provision across the UK

There are approximately 13,721 registered pharmacies across the UK, with 13,210 of those registered throughout Great Britain and 511 in Northern Ireland (General Pharmaceutical Council, 2025; Department of Health, 2024). When considering that the UK has approximately 14,000 registered pharmacies in the UK as of March 2023, it's clear that the sector is continuing to see the closures of pharmacy locations (Christie & Co Pharmacy, 2023). In England, the number of pharmacies was around 11,700 in 2023, with around 1,300 registered in Scotland, 525 in Northern Ireland and 724 in Wales, thus the number of pharmacies in each country of the UK has seen a decrease since 2023 (Christie & Co Pharmacy, 2023). Additionally, there were around 65,000 pharmacists and 27,000 pharmacy technicians in the UK as of June 2025 (General Pharmaceutical Council, 2025). This is compared to the 46,000 pharmacists in 2011 and 21,000 pharmacy technicians in 2012 (Statista, 2024).

**Table 1**

*Number of pharmacies across the UK in 2024 (Christie & Co, 2023; General Pharmaceutical Council, 2025; Department of Health, 2024).*

<b>Pharmacies across the UK</b>				
<b>Country</b>	England	Wales	Scotland	Northern Ireland
<b>No. of Pharmacies (2024)</b>	11,226	707	1,291	511
<b>No. of Pharmacies (2022)</b>	11,816	730	1,298	526
<b>Difference</b>	-590	-23	-7	-15

Across the UK, pharmacists can offer advice on a range of illnesses, such as coughs, colds, sore throats, ear infections, aches, and pains. They can also give advice about medicines. This includes how to use your medicine, worries about side effects or any other questions you have, while also referring you to a GP or other health professional if you require further advice (NHS, 2024).

##### 3.1.1 Common Ailments Scheme

As part of the Pharmacy First and Choose Pharmacy initiatives, the Common Ailments Scheme (CAS) aids in giving pharmacies a vital role in health services and reducing the strain on GPs and the NHS. The CAS allows pharmacists to assess and treat minor conditions and provide medicines free of charge without a prescription from a GP (Welsh Medicines Advice Service, retrieved February 2025). This gives individuals a chance to contact pharmacists for support and advice on certain illnesses, reducing the unnecessary booking of GP appointments and allowing more to be available to those with more complex needs. Therefore, the CAS allows

---

pharmacists to provide support for the following 27 ailments and illnesses (All Wales Medicines Strategy Group, 2023):

- Acne vulgaris
- Allergic rhinitis
- Athlete's foot
- Lower back pain without radiculopathy
- Chicken pox (in children under 14)
- Cold sores
- Conjunctivitis
- Constipation
- Diarrhoea
- Dry eye disease
- Dry skin (including contact dermatitis and atopic eczema)
- Dyspepsia
- Haemorrhoids
- Head lice
- Infantile colic
- Ingrowing toenail
- Mouth ulcers (simple aphthous)
- Nappy rash
- Oral candidiasis
- Ringworm, tinea cruris and intertrigo
- Scabies
- Sore throat
- Teething
- Threadworms
- Urinary tract infection
- Vulvovaginal candidiasis
- Warts and verrucae

Therefore, this scheme makes use of pharmacists' skills to aid in taking pressure off local GPs who may be struggling to meet patient demand for appointments while also aiming to improve patient access to consistent, evidence-based advice for the management of common ailments (All Wales Medicines Strategy Group, 2023). Additionally, some pharmacies providing the CAS may also offer Sore Throat Test and Treat consultation which provides clinical assessment for patients presenting with a sore throat and may include a simple throat swab test for those with symptoms alongside the supply of suitable treatment (Digital Health and Care Wales, retrieved February 2025).

An extension of this scheme leads to the Independent Prescribing Service where community pharmacists, subject to completing additional training, can appropriately diagnose acute conditions, which usually includes treatment for minor infections, and prescribe medicines for patients as Independent Prescribers (The Practice of Health, retrieved February 2025). Therefore, with this scheme in place, pharmacist independent prescribers can prescribe, administer and give directions for the administration of medicines for any medical condition within their area of competence (Welsh Government, 2024). As part of the training period of becoming an independent prescriber, trainees must undertake a period of practice-based learning to consolidate their academic learning by developing and demonstrating competence as a prescriber under the supervision of an experienced prescribing practitioner (Welsh Government, 2024). Therefore, trained pharmacists can prescribe appropriate treatments for medical conditions without the consultation of a GP, either independently or under the supervision of an experienced practitioner.

---

### 3.1.2 Discharge Medicines Review

Another service that has become available under the Choose Pharmacy initiative is the Discharge Medicines Review (DMR) which was developed to aid patient recovery after being discharged from a hospital visit, whilst also minimising the possibility of patients developing further health issues and being readmitted (Evans Pharmacy, retrieved May 2025). As a two-part service for patients or their carers within their first four weeks after being discharged from hospital or another care setting, it involves a reconciliation of the patient's first prescription with their discharge note while also providing support to the patient in how to use their medicines, reducing adverse drug reactions and compliance issues (Community Pharmacy Wales, 2022a). Therefore, this service seeks to ensure better communication of changes made to a patient's medicines to reduce harm at transfers of care, to improve patients' understanding of their medicines and how to take them following discharge from hospital (Community Pharmacy England, 2020).

### 3.1.3. Other Services

Other services include a contraception service, where accredited community pharmacists can supply emergency contraception and bridging contraception to a patient where appropriate (Digital Health and Care Wales, retrieved February 2025). The Choose Pharmacy system also includes a flu vaccination service where an eligible patient can consult their pharmacy to receive a flu jab, and the Emergency Medicines Supply service which allows pharmacists to provide patients with an emergency supply of medicine where they are unable to obtain a timely supply from their GP, for example when a patient is on holiday or when medication is urgently required outside of GP hours (Digital Health and Care Wales, retrieved February 2025). Therefore, over recent years, the provision of pharmacy services have become vital when considering the waiting times for GP appointments and the strain already placed on primary care settings.

Other current services include (National Services Scotland, 2020; NHS England; NHS Wales 111; Health and Social Care Northern Ireland, all retrieved May 2025):

- Pharmacy First services
- Disposing of old medicines
- Help with new medicines
- Getting the contraceptive pill without a prescription
- Emergency contraception
- Get a free blood pressure check
- Advice from a pharmacist after contacting NHS 111 or a GP
- Emergency medicines Supply
- Seasonal vaccines
- Additional hours services
- Lateral flow device tests supply service
- Acute Medication Service (Electronic Transfer of Prescriptions)
- Medicines: Care and Review (Medication review, pharmaceutical care, serial prescribing)

- 
- Chlamydia screening and treatment
  - Advice and help on how to stop smoking
  - Cholesterol and blood sugar testing
  - The substance misuse service, including needle and syringe exchange schemes
  - Advice and help on how to manage your weight
  - Common Ailments Service
  - Discharge Medicines Service
  - Stoma services
  - Unscheduled care
  - Sexual Health service
  - Gluten Free Food Service
  - Sore throat test and treatment
  - Palliative care medicines
  - Everyday health conditions (diarrhoea, head lice, threadworms and thrush)
  - Urinary Tract Infection services

#### **3.1.4. Economic Impact**

With this large variety of services available in community pharmacies, patients can access health support without the need for a GP appointment. This increase in the dependence on pharmacies has contributed towards an impressive pharmacy market revenue as seen from data, all collected from The Association of the British Pharmaceutical Industry, also known as the ABPI (retrieved May 2025). In 2021, the pharmacy industry produced £26.1 billion in exports and a turnover of £46.7 billion. This is compared to the £30 billion turnover seen in 2012 (HM Government, 2012). Therefore, we can see that the pharmacy industry is continually growing and contributes towards the decrease of pressure on other primary care services alongside its success in providing essential health services for patients without a referral from GPs.

#### **3.1.5. Employment and Demographic Impact**

When considering the impact of the pharmacy field on employment and research, over 126,000 people were employed within the pharmacy industry in 2021, compared to an estimated 70,000 employees in the UK pharmacy sector in 2012 (HM Government, 2012). Specifically, in 2021, England saw the most distribution of jobs within the UK, with 111,000 individuals employed in the pharmacy industry, Scotland saw 5,900 jobs, with Wales and Northern Ireland employing 4,800 and 4,300 respectively in 2021 (ABPI, retrieved May 2025; Office for National Statistics (ONS, 2022). Yet, it's important to consider the population size of each country to fully understand the size of the pharmacy industry and its employment, for example 0.2% of England's population was employed in the pharmacy field, 0.1% were employed in Scotland's pharmacy industry, and Wales and Northern Ireland both employed 0.2% of their population in the industry (ONS, 2022). Additionally, over 42,000 patients were recruited to industry clinical trials in 2022/23 where over 400 industry clinical trials were initiated in the UK in 2022. Clinical trials aid healthcare providers to understand how to treat illnesses and provide the patient with the opportunity to be one of the first to benefit from a new treatment (NHS, 2022). Therefore, it's clear that the current pharmacy provision in the UK welcomes a consistent development in

services, and continuously contributes towards the advancement of medicines and treatments for illnesses and conditions that affect UK civilians.

### 3.1.6. UK Pharmacy Locations

Boots Pharmacy, Well Pharmacy and Rowlands Pharmacy were the largest pharmacies in the United Kingdom in 2024 based on the number of locations. Boots has the greatest number of locations with 2,160 locations across the UK, including the Channel Islands and the Isle of Man. Well Pharmacy have significantly a smaller number of locations across the 6 countries with 702 as of 2024. There are 340 Rowlands Pharmacies in the UK as of 2025 (ScrapeHero, 2024). The top pharmacy in each country is Boots in England with 1,709 locations, Scotland with 274 locations and Northern Ireland with 77 locations, with Well Pharmacy being the top pharmacy in Wales with 105 locations (ScrapeHero, 2024). The top pharmacy in the Channel Islands and the Isle of White is also Boots with 7 and 1 locations respectfully as there are no Well or Rowlands Pharmacies located in these locations (ScrapeHero, 2024).

**Figure 2**  
*Top pharmacies in the UK*



### 3.1.7. Challenges Faced within UK Pharmacy

In undertaking this research, the following themes have been identified as the main challenges facing the pharmacy industry across the UK:

- Shortage of qualified professionals
- Expanded scope of practice
- Geographical disparities
- Rising operational costs and frail funding

With the development of pharmacy provision comes both opportunities and challenges for the pharmacy profession. Specifically, one of the main challenges facing pharmacy in the 21st century is the shortage of qualified professionals, as healthcare demands increase due to an aging population, chronic disease prevalence and new drug discoveries, the need for pharmacists and pharmacy technicians has outpaced supply (Aru et al., 2023). This specific issue has been a hot topic over recent years, with pharmacists added to the Home Office's shortage occupation list in 2021, and respondents citing lack of staff as a barrier to doing their jobs where the workforce survey in Wales found national vacancy rates of 6% for community pharmacists in 2019 (Connelly, 2022). The pressures that come with short staffing can not only affect the personal and professional lives of pharmacy staff but also the quality of patient care where staffing shortages have resulted in longer waiting times, impacting timely access to medication and advice (Dineshwori, 2024).

---

Other issues faced by the pharmacy profession is the expanded scope of practice as pharmacist's roles have evolved beyond traditional dispensing responsibilities that require additional pharmacists, but the rate of workforce growth has not kept pace (Aru et al., 2023).

Additionally, geographical disparities emphasise how workforce shortages are not uniform across regions where rural and underserved areas often experience more severe shortages due to challenges in attracting and retaining healthcare professionals, including pharmacists, which then cause further issues such as delayed or inadequate patient care in underserved areas (Aru et al., 2023).

Overall, the pharmacy sector has been at crisis point for some time, especially due to rising operational costs and the need for more funding impacting patient care, team wellbeing and the sustainability of community pharmacies (Sharma, 2025). The issue of funding can lead to the cutting of opening hours, home deliveries, medicine availability, and ultimately to the closure of community pharmacies (Giddings, 2024). The lack of funding therefore impacts the provision of pharmacy services, and once again affecting the quality of patient care due to increasing stressors placed on pharmacies all over the UK.

## **3.2. Pharmacy Provision across Wales**

### **3.2.1. Number of Pharmacies in Wales**

There were 694 registered pharmacies in Wales in April 2025, the majority of which being in North Wales under the Betsi Cadwaladr University Health Board (Shared Services Partnership (SSP), 2025a). The smallest number of pharmacies were in Powys, in Mid Wales under the Powys Teaching Health Board, as seen in Table 2 (p.12).

Additionally, the population covered by each health board, as of 2023, was as followed (Welsh Government, 2024):

- Aneurin Bevan University Health Board (UHB) had a population of approximately 595,412
- Betsi Cadwaladr University Health Board (UHB) had a population of approximately 691,991
- Cardiff and Vale University Health Board (UHB) had a population of approximately 518,269
- Cwm Taf Morgannwg University Health Board (UHB) had a population of approximately 446,514
- Hywel Dda University Health Board (UHB) has a population of approximately 388,139
- Powys Teaching Health Board has a population of approximately 134,439

- Swansea Bay University Health Board (UHB) had a population of approximately 389,640

**Table 2**

*Number of pharmacies across Wales in 2025 characterized by Health Board and Locality (SSP, 2025a).*

Health Board	Locality	No. of Pharmacies	Totals
Aneurin Bevan University Health Board (UHB)	Blaenau Gwent	16	125
	Caerphilly	41	
	Monmouth	18	
	Newport	30	
	Torfaen	20	
Betsi Cadwaladr UHB	Conwy	23	144
	Denbighshire	23	
	Flintshire	28	
	Gwynedd	28	
	Wrexham	29	
	Ynys Mon	13	
Cardiff and Vale UHB	Cardiff	76	106
	The Vale of Glamorgan	30	
Cwm Taf Morgannwg UHB	Bridgend Locality	33	109
	Merthyr Tydfil	13	
	Rhondda Cynon Taff	63	
Hywel Dda UHB	Carmarthenshire	48	96
	Ceredigion	19	
	Pembrokeshire	29	
Powys Teaching Health Board	Powys	23	23
Swansea Bay UHB	Neath/Port Talbot	33	91
	Swansea	58	

### 3.2.2. Population per Pharmacy

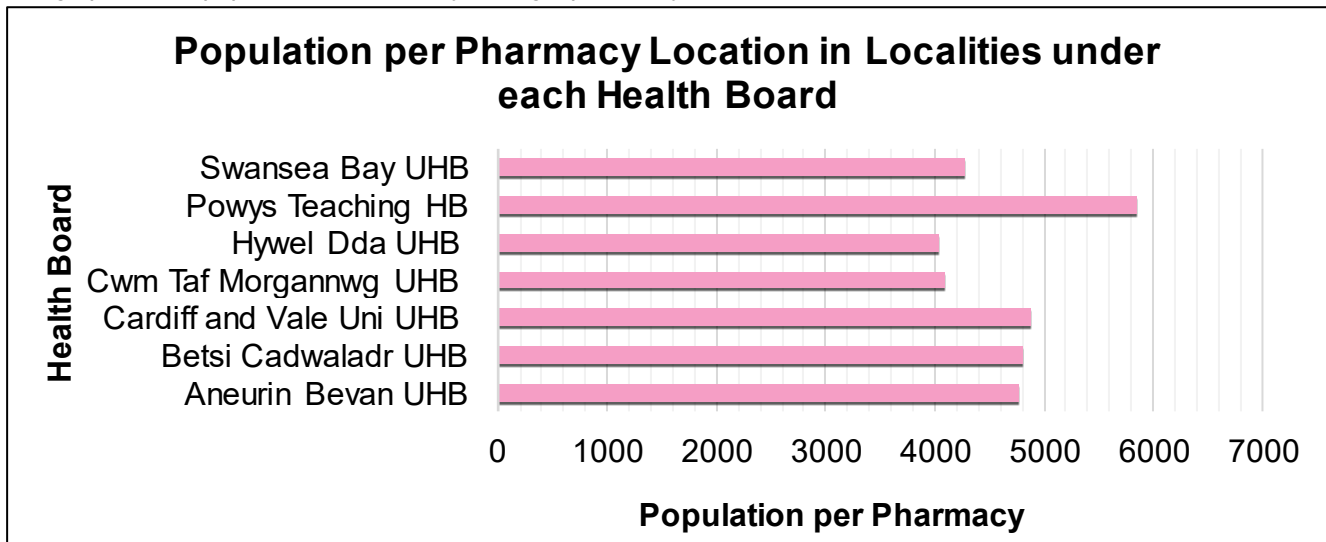
Based on the population densities covered by these health boards, we can understand how much of a population is covered by one pharmacy. The size of the populations covered by each pharmacy is similar for the localities under Cardiff and Vale UHB, Betsi Cadwaladr UHB and Aneurin Bevan UHB, with around 4,800 individuals to each pharmacy location in these regions. Therefore, a single pharmacy is expected to provide essential medication and treatment services to around 4,800 individuals (Welsh Government, 2024). The pharmacies lo-

cated in the localities under Hywel Dda UHB and Cwm Taf Morgannwg UHB have a population density of around 4,000 people to each location based on their populations in mid-2023, with pharmacies located under the Swansea Bay UHB expected to provide services to around 4,200 individuals at each pharmacy location (Welsh Government, 2024). The locality with the largest population per pharmacy is Powys, as it has the lowest number of pharmacies overall but is still expected to provide services to a population density of over 130,000. Therefore, each pharmacy in Powys covers a population of 5,800 individuals.

Therefore, as we can see in the graph below, the number of pharmacies available in Powys is dramatically low for its overall population, as each pharmacy location is expected to cover a population size that is much higher than those seen under the other health boards. Despite this, depending on a small pharmacy team to provide services for over four thousand people clearly shows that pharmacists are extremely vital and require more resources to adapt to the demand for care in each location. Although pharmacies aid in reducing strain on other primary care services, it's important to understand that they also might be struggling to provide services for such a large population.

**Figure 3**

*Bar graph of the population covered by a single pharmacy location in localities under each health board*



### 3.2.3. Pharmacy Services in Wales

Currently, pharmacies in Wales provide the following services, mostly based on the Choose Pharmacy initiative previously mentioned in this report:

- Common Ailments Schem
- Discharge Medicine Review
- Waste Reduction Scheme
- Inhaler Review Service

- Emergency Medicine Supply
- Palliative Care Just in Case Scheme
- Return of Patients Sharps Box
- Seasonal Flu Vaccine
- Smoking Cessation
- Sore Throat Test and Treat
- Supervised Administration of Prescribed Medicine
- Urinary Tract Infection Service
- Additional hours service
- Independent Prescribing for Common Ailments and Contraception
- Covid 19 Vaccination Service
- Appliance Use Review Service
- Tuberculosis Medicine Compliance Service
- Respiratory Rescue Medicines Service
- Medicines Management in Domiciliary Care
- Stoma Customisation Service

Again, with such a range of services available through the pharmacy, patients are presented with more opportunities to reach the health advice and treatments that they require without needing to book a GP appointment or receive a prescription from a GP. Not all pharmacies provide all services; therefore, patients are required to check beforehand whether the service they are seeking is available in each pharmacy location, yet we must remember that many are not aware of the range of services provided by pharmacies (Charac, 2024). Therefore, initiatives such as Pharmacy First, or Choose Pharmacy are vital in raising awareness of the alternative pathways to support that patients can take other than through the GP or emergency services.

### 3.2.4. Pharmacy Chains in Wales

Out of the 694 pharmacies currently registered in Wales, around 80% are made up of pharmacies under the management of large pharmacy chains such as Boots, Well Pharmacy, Rowlands Pharmacy and Allied Pharmacies (SSP, 2025a). Yet, there are still many independent community pharmacies across the whole of Wales that collaborate with the NHS to deliver essential healthcare services and medication advice (SSP, 2025a).

The top pharmacy chain in Wales is Well Pharmacy with just over 100 locations throughout the country, with this pharmacy chain also having the most locations based in the localities under Cardiff and Vale UHB, Cwm Taf Morgannwg UHB, Aneurin Bevan UHB, and Swansea UHB in the south of Wales. Throughout West and Mid Wales, Boots Pharmacy is the top pharmacy chain with 15 locations in the localities under Hywel Dda UHB and 7 locations based in the localities under Powys Teaching Health Board.

**Figure 4**  
Top pharmacies in Wales Health Board Localities



---

Lastly, in North Wales, the top pharmacy chain is Rowlands Pharmacy, with 48 locations located in the localities served by Betsi Cadwaladr UHB.

### **3.2.5. Pharmacy Training in Wales**

When considering the demand for services within the pharmacy field, it's worth exploring the training and recruitment opportunities in Wales to work in the pharmaceutical industry. To qualify as a pharmacist, one must complete a Master of Pharmacy (MPharm) degree, approved by the GPS which takes 4 years, followed by a pharmacist foundation training scheme (National Careers Service, retrieved August 2025). For those who cannot qualify for an MPharm, there is a possibility of doing a pharmacy foundation degree to qualify as a pharmacy assistant or technician to gain the qualifications to study the MPharm (National Careers Service, retrieved August 2025).

In Wales, there are 11 undergraduate degrees focusing on either pharmacology or pharmaceutical science based in the Universities of Bangor, Cardiff, South Wales and Swansea. There are approximately 9 postgraduate degrees with a focus on Pharmacy, where only Bangor, Swansea and Cardiff University offering the Master of Pharmacy postgraduate qualification, which shows that most opportunities to earn pharmaceutical qualifications and progress through the field are in South Wales, with one opportunity in the North. Foundation degrees are available in Swansea University and the University of South Wales (UCAS, retrieved August 2025).

Training opportunities offered by Health and Education Improvement Wales (HEIW) offer a range of support for those training within the pharmacy field, for example the Funded Pharmacy Undergraduate Programme in collaboration with Bangor, Cardiff, and Swansea University offers MPharm students enhanced placements consisting of a 5-day block to work alongside various members of pharmacy teams with training from a placement supervisor (HEIW, retrieved August 2025).

Newly registered pharmacists can also join the post-registration foundation pharmacist programme developed by HEIW and Cardiff University, which incorporates the opportunity to complete an IP qualification in addition to other modules (NHS Jobs, retrieved August 2025). The curriculum includes independent prescribing, and develops leadership, management, education and research capabilities (RPS, retrieved August 2025).

Despite this, there are other pathways to qualify to work within the pharmacy field, such as a pre-registration foundation pharmacist training programme, where Health and Education Improvement Wales (HEIW) provides a blended learning with virtual and face-to-face study events and assessments to aid individuals to work towards a Certificate of Higher Education in Pharmacy Technician Practice (Level 4) (HEIW, retrieved May 2025). To qualify for this programme, individuals must have a minimum of 4 GCSEs grade A\* - C and must be employed within a pharmacy setting. Then, HEIW also offers post-registration pharmacy techni-

---

cian e-training that allows specialising in roles such as consultation skills, delivering pharmacy public health services, medicines management and accredited checking for pharmacy technicians to progress within their roles (HEIW, retrieved May 2025).

roles that are available in pharmacies include pharmacy assistants, which do not require a pharmacy degree or training, allowing a range of individuals to contribute to the provision of pharmacy services in Wales (NHS, retrieved April 2025). Additionally, an individual can become a pharmacy technician following a level Pharmacy Technician apprenticeship, which again is offered by HEIW for individuals with appropriate GCSEs (HEIW, retrieved May 2025).

Awareness should be raised on the availability to study or train in Wales to work within the pharmacy field to increase the recruitment of qualified workers to provide pharmaceutical services. With this effort, an increased workforce could contribute towards a decrease in strain on pharmacies, and further distribute the demand of services equally between primary care and other healthcare providers. Yet, as none of these courses are strictly located in rural areas of Wales, effort needs to be made to attract qualified workers to provide their expertise in other areas other than the urban areas where the majority of these educational or training courses are located.

### **3.3. Pharmacy Provision across Mid Wales**

In Mid Wales, the area defined earlier in this report, there are 38 registered pharmacies, nineteen in Ceredigion, five in Gwynedd, and fourteen in Powys (SSP, 2025a).

#### **3.3.1. Pharmacy Locations and Chains in Mid Wales**

These 38 pharmacies do not include hospital-based clinical pharmacies and dispensing GP surgeries. To note, as of May 2025, Mid Wales features 8 dispensing GPs, and one clinical pharmacy based in Bronglais Hospital in Aberystwyth (SSP, 2025b).

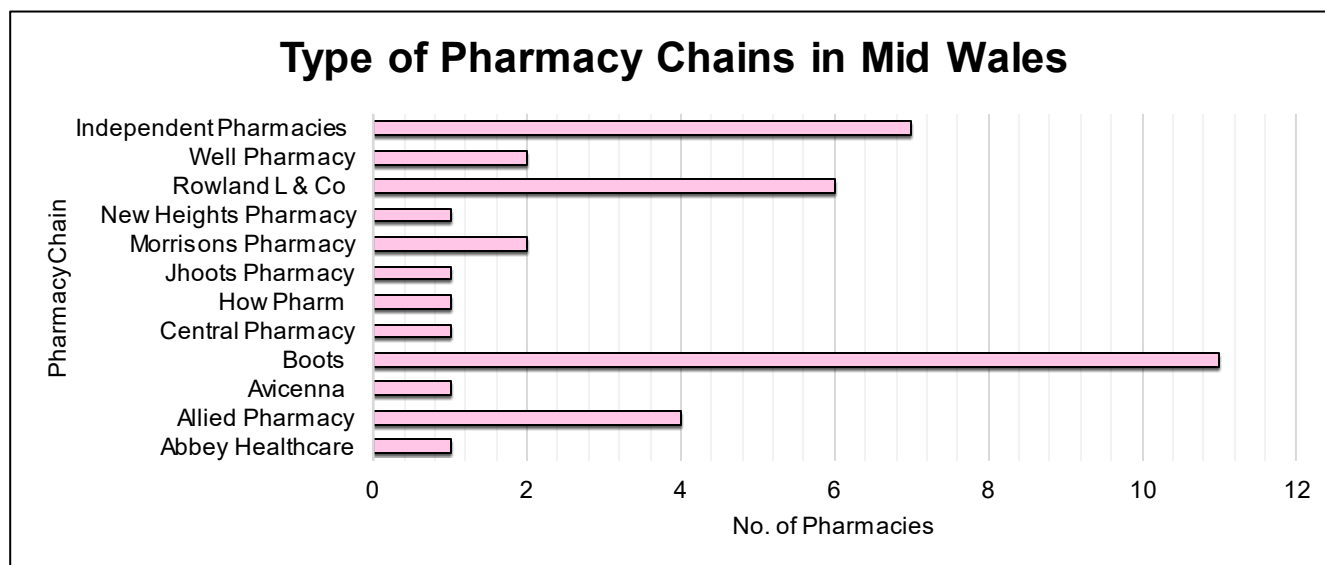
The eight dispensing GPs are:

- Llanilar Health Centre, Llanilar, Ceredigion
- Arwystli Medical Practice, Llanidloes, Powys
- Caereinion Medical Practice, Welshpool, Powys
- Iechyd Bro Ddyfi – Dyfi Valley, Machynlleth, Powys
- Montgomery Medical Practice, Montgomery, Powys
- Newtown Medical Centre, Newtown, Powys
- Presteigne Medical Practice, Presteigne, Powys
- Welshpool Medical Centre, Welshpool, Powys

Thus, for the purpose of the report, we will only discuss community pharmacies based in Mid Wales.

**Figure 5**

*Bar graph of the type of pharmacy chains in mid Wales*

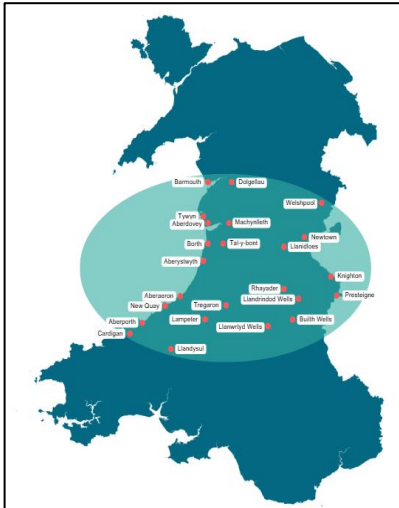


As seen in the bar graph above, the largest number of pharmacies are operated under the Boots UK chain (n=11), where the second highest number are independent community pharmacies that provide NHS services (n=7). The third most popular pharmacy has locations operated under Rowland L & Co (n=6). Allied pharmacy has 4 locations across Mid Wales with Well Pharmacy having 2 locations. The rest of the Mid Wales pharmacies operate under the chains New Heights Pharmacy, Morrisons Pharmacy, Jhoots Pharmacy, How Pharm, Central Pharmacy, Avicenna Ltd. and Abbey Healthcare.

Of the independent pharmacies in Mid Wales, they operate under the following names in these locations:

- Adrian Thomas Pharmacy, Lampeter
- Penrhyn Pharmacy, Aberporth
- Borth Pharmacy, Borth
- Caerleon Pharmacy, Cardigan
- Huw Evans Chemist, Tregaron
- Llanidloes Pharmacy, Llanidloes
- Presteigne Pharmacy, Presteigne

**Figure 6**  
*Pharmacy locations across  
 Mid Wales*



The 38 pharmacies in Mid Wales are located in the following 24 towns and villages across, Ceredigion, Gwynedd and Powys. Some locations have multiple pharmacies where Aberystwyth has four pharmacies, Cardigan, Lampeter and Newtown have three pharmacies each, and Llandysul, Llandrindod Wells, Aberaeron, Welshpool and Dolgellau all have two pharmacies. The other locations only have one pharmacy to serve their residents. From this map, we can see that Mid Wales has a range of locations that contain a pharmacy that can provide essential health services and advice to the residents of Mid Wales. Yet, considering that most of these towns and villages only have one pharmacy to serve their whole population, we must remember that the demand for their services could be high, especially when considering their role in reducing strain on other primary care services that might also be low in the number of locations.

### 3.3.2. Mid Wales Pharmacies per Square Mile

After mapping out the area of Mid Wales, this section is approximately 2000 miles<sup>2</sup>, meaning the 38 pharmacies located in Mid Wales approximately cover this area size of the country. Therefore, each pharmacy covers around 48 miles<sup>2</sup>, which highlights their importance to Mid Wales patients and raises the question of whether the resources each community pharmacy is given is sufficient to support this large workload. The area of Gwynedd that is considered part of Mid Wales is approximately 134 miles<sup>2</sup>, and with 5 pharmacies being located in this area, each pharmacy is expected to cover around 27 miles<sup>2</sup> of patients living in that area. The area of Powys in Mid Wales is approximately 1,062 miles<sup>2</sup>, leaving each pharmacy to cover an area of 75 miles<sup>2</sup>. The area of Ceredigion is approximately 689 miles<sup>2</sup> leaving each pharmacy to provide services to an area of 36 miles<sup>2</sup>. Therefore, when considering the surface area of each locality that is located within Mid Wales, it's clear that Powys' distribution of pharmacies across the area is scarce, as each pharmacy is left to cover a larger surface area than those seen in areas in Ceredigion and Gwynedd that are included in our definition of Mid Wales. This highlights the importance of pharmacies in Mid Wales, as they are essential in providing primary care services without the need for GP's across a large area of Wales that is mostly rural.

### 3.3.3. Pharmacy Services in Mid Wales

Therefore, when considering the importance of pharmacies in providing essential healthcare services and advice without the need for a GP appointment or prescription, it's worth noting the specific services offered by the pharmacies located throughout Mid Wales. The following services are offered in Mid Wales pharmacies (NHS 111 Wales, retrieved May 2025):

- Additional hours services (includes extended hours and Bank Holiday rota)
- Common Ailments Service
- Discharge Medicine Review (DMR)
- Emergency Medicines Supply (EMS)
- Palliative Care Just in Case scheme
- Return of Patients Sharps Boxes
- Seasonal Flu Vaccine
- Smoking Cessation
- Sore throat test and treat
- Supervised administration of prescribed medicine
- Urinary Tract Infection Service
- Waste Reduction Scheme
- Independent Prescribing for Common Ailments and Contraception
- Covid 19 Vaccination Service
- Inhaler Review Service
- Medicines Management in Domiciliary Care
- Medicines Administration Record (MAR) Provision
- Respiratory Rescue Medicines Service
- Contraception Services
- Needle & Syringe Programme
- Out of Hours Services
- Supply of COVID Lateral Flow Test Kits
- Urgent Medicines Service
- Care Home Support Service
- Palliative care OOH services
- Tuberculosis Medicine Compliance Services

#### **Languages offered in pharmacies**

- Welsh
- Spanish
- Gujarati
- Hindi
- Panjabi
- Urdu
- Italian
- Romanian

With such a range of services provided throughout Mid Wales, it's worth noting how many pharmacy locations offer each service. All 38 pharmacies in Mid Wales offer the Common Ailments Service, Discharge Medicine Review, Emergency Medicines Supply, Return of Patients Sharps Boxes, Seasonal Flu Vaccine, Smoking Cessation, Urinary Tract Infection Service, Contraception Service and Out of Hours Services subject to availability. Therefore, the whole of Mid Wales is offered these essential services despite their local pharmacy's location. 36 pharmacy locations offer a supply of Covid 19 Lateral Flow Test Kits, and 34 pharmacies offer a Sore Throat Test and Treatment Service alongside the Supervised administration of prescribed medicine.

The Palliative Care Just in Case Scheme is offered in 25 pharmacies in Mid Wales, which gives access to medicines commonly prescribed in palliative care in the form of a Just in Case pack, which is kept in the patient's home when reaching the terminal phase of their illness (British Medical Association, 2024).

18 pharmacies have advertised that they can provide medical advice and treatment through the medium of Welsh, an important asset for patients living in rural Mid Wales.

---

The Needle and Syringe Program is offered in 16 pharmacies, which is a confidential service for people who inject drugs to pick up sterile injecting equipment and dispose of used equipment safely to reduce the transmission of blood borne viruses and other infections caused by sharing injecting equipment (National Institute for Health and Care Excellence, 2014).

17 pharmacies contribute towards the Waste Reduction Scheme, which aims to reduce prescribing waste and over-ordering of repeat medication by utilising pharmacy staff to ascertain directly from patients whether the specific medication is required (NHS Wales, 2024; SSP, 2025a).

The provision of a Medication Administration Record is offered in 15 pharmacies across Mid Wales, and 11 offer an Inhaler Review Service which provides support and information on the use of inhalers to improve patient understanding (SSP, 2025a).

Ten pharmacies in total offer the independent prescribing for common ailments and contraception across Mid Wales, alongside the Care Home Support Service which offers scheduled visits to care homes to educate care home staff on the overall safer use of medicines and 7 pharmacies offer the Urgent Medicines Service which supports timely “in-hours” access to medicines which might otherwise not routinely be immediately available (Health and Social Care Board, 2021; NHS Wales 2022; SSP 2025a).

Six pharmacies offer Medicines Management in Domiciliary Care, which supports and enables care workers to manage and safely administer medicines to their service users (NHS Wales, 2021; SSP 2025a).

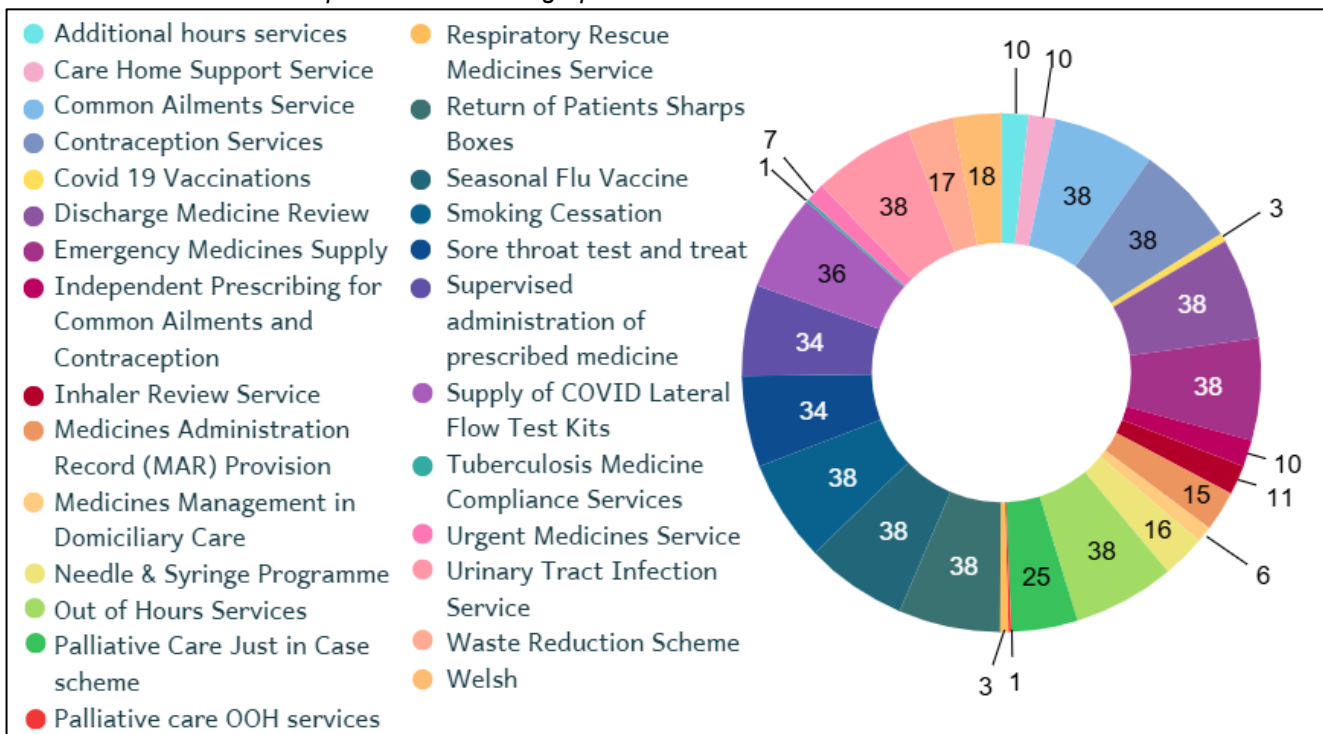
Three pharmacies offer a Covid 19 Vaccination service and the Respiratory Rescue Medicines Service to support patients with respiratory conditions (such as COPD) to manage exacerbations at home.

Lastly, one pharmacy in Mid Wales offers Palliative Care Out of Hours Services to help people who are struggling to access end-of-life medicines. Therefore, we can see that all pharmacies across Mid Wales offer the services that come as part of the Choose Pharmacy initiative, with several pharmacies offering more specialized services for those with specific issues that need attention.

Alongside the wide range of services available across Mid Wales, ground-breaking trials also take place within the region as seen in Dolgellau, where locals face 50-mile journeys to access pharmacies (MediWales, 2025). In 2025, new technology is being trialled outside Dolgellau Hospital which allows patients who have a telephone assessment out of hours to pick up the urgent medication at times when local pharmacies are not open (Betsi Cadwaladr UHB, 2025). The REMEDY machine, a joint project between Betsi Cadwaladr UHB and Bangor University, in collaboration with the manufacturer and supplier and Oxford University funded by Health and Care Research Wales, acts as a vending machine stocking a variety of antibiotics, steroids and inhalers. This two-year trial will aim to increase access to urgent medications for those who are not able to reach a community pharmacy to receive the support and medications needed urgently (Betsi Cadwaladr UHB, 2025; MediWales, 2025).

Despite the large variety of services offered throughout Mid Wales, as not every service is available in every pharmacy location, patients are obligated to check that their local pharmacy provides the specific service that they are looking for. Some patients might be expected to travel further to a pharmacy that provides the support they are seeking or find alternative ways to receive said services. Additionally, many patients may not be aware that pharmacies offer these new and additional services, meaning that they might still be seeking advice from other primary care service providers in unnecessary circumstances. Raising awareness of pharmacies increasing role in providing health care services could aid patients in finding essential support and advice closer to home, without facing the strain and waiting times of other primary care settings. For clarity, the chart below shows the number of pharmacies across Mid Wales that offer each service.

**Figure 7**  
The number of Mid Wales pharmacies offering specific services



### 3.3.4. Mid Wales Pharmacy Opening Hours

As seen in the chart above, ten pharmacies across Mid Wales offer additional hours services. Yet, it's worth exploring the ordinary opening hours of these pharmacies, as they all tend to differ. 36 out of the 38 pharmacies in Mid Wales are open from Monday to Friday with fixed opening hours between the hours of 8am to 6pm, yet the exact opening hours differ slightly in each location, for example one pharmacy may open from 9am until 5:30pm, with another opening 9:30am to 6:30pm. Yet, they are open every day of the working week with fixed hours. The number of pharmacies that are open on Saturdays is 33, although the number of hours that they open on Saturdays also differ from each location. 3 pharmacies are open on

---

Sundays between 10am and 4pm, with one location closing for an hour during lunchtime. 22 out of the 38 pharmacies in Mid Wales are closed for between 20 minutes to an hour at lunchtime, yet these exact times differ for each location. Additionally, 4 pharmacies do not have fixed opening hours, where they might be open for less time on certain days, for example the pharmacy in Tregaron has longer opening hours on Wednesdays as compared to the other days in the week.

### **3.3.5. Mid Wales Pharmacy Training**

These differing opening hours may reflect the staffing situation in each pharmacy, as they may only have enough staff to open for specific hours each week. Therefore, it brings our attention to the training opportunities in Mid Wales and the attempt to attract pharmacy staff to work in these establishments. As previously mentioned, there are 11 undergraduate degrees and 9 postgraduate degrees with a focus on Pharmacy in Wales, yet none of these are based in Mid Wales. Despite this, the post-registration foundation pharmacist training programme by HEIW aids provides training opportunities for MPharm students across Wales (HEIW, retrieved April 2025). Therefore, it could be possible for individuals to complete this practical training in Mid Wales pharmacies, but this seems unrealistic when considering their student status and where they might be studying.

Additionally, an individual can become a pharmacy technician following a level Pharmacy Technician apprenticeship, which again is offered by HEIW and can again be encouraged to complete this apprenticeship in pharmacy locations in Mid Wales instead of the popular areas in Urban Wales.

Despite these opportunities, most programmes require individuals to have a Pharmacy specific degree or sufficient experience within the medicine or pharmacy field to be eligible to take part. Therefore, there is a need for a medicine or pharmacy-based degree, such as the MPharm, at a Mid Wales educational institute such as Aberystwyth University or University of Wales Trinity Saint David to provide a starting point for individuals wishing to progress through the pharmacy career without having to move away to gain the relevant qualifications. Additionally, placements and training opportunities should be encouraged to take place in rural pharmacy locations so qualified individuals can take part in practical learning from other experts in the pharmacy field and experience rural pharmacy work first hand. By providing opportunities in rural areas, individuals might be more likely to work for the Mid Wales pharmacy workforce in the long-term, providing that there is sufficient opportunity to progress and further develop their training once employed rurally. Smaller colleges across Mid Wales could also benefit from offering additional apprenticeships for other roles that are vital to the pharmacy workplace.

---

## 4. Best Practice in Pharmacy Provision

### 4.1. Examples of International Best Practice

A core focus of this research has been based on a literature search that was conducted in order to determine best practice models in the provision of pharmacy services. In undertaking this, a search strategy was created which utilised key terms that could be used for electronic database searching. A Library and Knowledge Services Manager and Knowledge Services Assistant from Hywel Dda University Health Board's Bronglais Library assisted in the search process.

Searches were conducted in the Medline database and on the internet on best practice models in the delivery of pharmacy services in rural areas. Records were restricted to English language only. A combination of keywords and subject descriptors were used to describe the concepts of 'pharmacy' or 'pharmacy services' or 'best pharmacy practice' and these were linked with 'rural' or 'remote' areas.

The internet evidence search identified 6 records, mainly systematic reviews and models of delivering pharmacy services. The Medline search yielded 76 records. All relevant articles were initially screened for their relevance to the research question. In total, 14 articles of particular relevance were identified, which were thematically grouped to inform four potential pharmacy best practice delivery models. Although exact direct relevance to pharmacy provision for the majority of the articles varied, with some focusing on specific conditions or diseases, the potential for replication, adaptation and moulding to Mid Wales provision is possible.

These four identified models of best practice are outlined below:

#### 4.1.1. Best Practice Example 1: Pharmacist-delivered patient-centred health care model (PCHC) - Ross & Bloodworth (2003)

*Ross & Bloodworth delivered a patient-centred health care model that implemented a comprehensive medication therapy management program. Pharmacists received training to provide one-on-one patient consultations to review patients' prescribed medications and drug-related needs to create a personalized care plan for each patient.*

Ross & Bloodworth (2003) provided preliminary clinical and economic outcomes from a pharmacist-delivered patient-centred health care (PCHC) model implemented in the rural Mississippi Delta. The model implemented a comprehensive medication therapy management (MTM) program with pharmacist training, individualized patient encounters and group education, provider outreach, integration of pharmacists into health information technology, and on-site support in community pharmacies. The authors stated that diabetes and asthma were selected for specialized MTM services to be rolled out during the first year of the program based on the high disease burden and provider needs in the area, and generalized MTM

---

services, provided by community pharmacists, were rolled out in the second year. Upon enrolment, pharmacists met with patients for one-on-one encounters and entailed a comprehensive review of all medications prescribed and a systematic assessment of drug-related needs and previous medication experience to identify, resolve, and prevent medication-related problems. An individualized care plan was developed and a follow-up evaluation completed where pharmacists also performed on-site point-of-care testing for disease control (Ross & Bloodworth, 2003). Participating pharmacists were provided MTM training through the American Pharmacists Association, disease-specific education classes were provided at community locations such as libraries, community centres, or physician offices for referred patients and the implementation of the Electronic Health Record provided enhanced communication between community pharmacies and participating provider practice sites to document pharmacy interventions and to integrate all health care providers involved in the care of an individual patient.

Ross and Bloodworth (2003) summarised the main clinical outcome measures of this patient-centred health care model which firstly indicated that 1,471 drug-therapy problems were identified during patient encounters based on four criteria: indication, effectiveness, safety, and adherence. The most common problems were related to the need for additional drug therapy, dosages being too low, or medication nonadherence, where one quarter of the problems identified were referred to physicians to make a recommendation and approximately one third of the recommendations resulted in initiation of drug therapy. Pharmacists indicated that the most common health care encounters avoided for all diseases were outpatient clinic visits and laboratory services. For the disease-specific MTM patients, emergency department visits also were commonly avoided in some patients, contributing to significant cost savings.

More than 450 patients in the Delta region of Mississippi benefited from the provision of PCHC services by pharmacists as the project enabled patients taking multiple medications to have access to MTM services. Services were replicated in multiple communities in this underserved region, and preliminary data analyses suggested that this PCHC pharmacy program was beneficial, as results appeared to be trending in a positive direction, and that it had the potential to be replicated in similar rural communities (Ross & Bloodworth, 2003).

#### **4.1.2. Best Practice Example 2: Cloud-based prescription review – Liu et al. (2020)**

*Liu et al. (2020) used a cloud-based prescription review system that allowed the real time review of new prescriptions by remote pharmacists for approval to reduce inappropriate prescriptions and errors.*

A similar initiative conducted by Liu et al. (2020) focused on reducing the occurrence of inappropriate prescription in primary care through the introduction of a cloud-based pre-prescription review system featuring reviews by remote clinical pharmacists. This study describes the implementation of remote pharmacy at 22 community health centres (CHC) in Futian District, Shenzhen, China. A pre-prescription system was developed and deployed in

---

the cloud, which was linked to CHCs, and a consortium of qualified clinical pharmacists located in a tertiary hospital. When a drug prescription order was entered at a CHC, a real time first review would be performed by the commercial rational drug use review program within the pre-prescription review system. Appropriate prescriptions were approved for print and payment, but if a potentially inappropriate prescription was detected, the prescription order entry would be suspended and returned to the GP in the CHC immediately. The prescribers were required to revise the prescription and to submit a new order where the revised prescription would also be reviewed. In those cases, the patient information and the prescription information were sent to any pharmacists of the consortium who were available remotely (Liu et al., 2020).

During the study period, patients received 340,117 prescriptions from GPs in 22 CHCs. Of these, 24,828 (7.3%) inappropriate prescriptions were detected by the pre-prescription review. The most common inappropriate prescriptions detected by both the review software and the pharmacists were related to improper administration routes or drug-drug interactions or had no justified indications. Among the prescriptions reviewed by clinical pharmacists, 3230 (49.9%) were found to be inappropriate and required corrections by the prescribers. The study therefore had meaningful clinical implications where the prevalence of inappropriate prescriptions could be reduced and that pharmacy services could be improved with the implementation of a remote pre-prescription review. With the introduction of cloud-based pre-prescription review, remote pharmacy care could be delivered from developed areas, which usually have enough qualified clinical pharmacists, to rural areas, where there is chronic understaffing in both the hospital and community pharmacy sectors and a shortage of pharmacists. This cloud-based system can also include other pharmaceutical care programs, such as medication therapy reviews in settings with a high prevalence of drug-related problems.

#### **4.1.3. Best Practice Example 3: Telepharmacy – Poudel & Nissen (2016)**

*Poudel & Nissen (2016) explored the perceived benefits of the telepharmacy practice to provide virtual consultations to remote patients.*

Poudel and Nissen (2016) bring attention to how pharmacies that currently operate in remote areas face the problem of service sustainability because of recruitment and retention of pharmacists, leading to difficulties in creating succession plans. As such, residents must either drive to the nearest pharmacy or use mail order or online services to fill their prescription, which is a particular concern for frail individuals with limited mobility and limited support or without the connection/competence of information technology. This study explored the perceived benefits of telepharmacy and telemedicine, where the most commonly described telemedicine and telepharmacy practice is those involving the use of telephones, videoconference, and the Internet to provide healthcare services and pharmaceutical care through the use of telecommunications and information technologies to patients at a distance. In any telepharmacy model, pharmacists can play an active role in the delivery of pharmacy services (Poudel & Nissen 2016).

---

The authors highlight the primary advantage of telepharmacy as the easy access to healthcare services in remote and rural locations as pharmacists can provide high-level pharmaceutical care services in remote areas that have lost or are losing access to healthcare services. Approximately half of the 410 small rural hospitals in the USA reported on-site pharmacist availability as a major issue where the development of several models of telepharmacy enabled a full-services operation that encompasses the active role of remote and central pharmacists (Poudel & Nissen, 2016). Additionally, it is reported that starting a new pharmacy store is much expensive than the cost involved in the equipment and recruitment of a pharmacy technician for telepharmacy as one skilled pharmacist can provide services to multiple sites. Telepharmacy also saves travel time and expense, which are major barriers for rural elderly and disabled individuals. One of the prominent barriers in clinics used to be with the elderly patients missing their appointments because they did not want to go out of their homes. This remote technology has allowed pharmacists to review patient's medications without them having to travel. This has increased patient trust and satisfaction with the service, where rural community patients also value receiving pharmacy services locally via telepharmacy services rather than having to travel outside of their community (Poudel & Nissen, 2016). A number of hospitals, clinics, and medical centres in rural settings are currently facing the scarcity of local pharmacy services where the majority of pharmacy services are shifted toward nurses, doctors, and other healthcare providers. A remote telepharmacy service is a viable option to cover these shifts of pharmacy responsibilities to other professions in rural areas and improving patient access to pharmaceuticals and pharmacy services. Telepharmacy eases difficult scheduling periods, when pharmacist replacements and relief help may not be readily available, and supports staff coverage for after hours, weekends, vacations, and during emergencies (Poudel & Nissen, 2016).

Despite the large variety of benefits to telepharmacy, Poudel and Nissen (2016) explored the possible barriers to implementing this approach, such as the need for complex and sophisticated equipment with high-speed digital connection, which are often limited in rural areas. Additionally, the start-up of telepharmacy (hardware, software, connectivity, and operational cost) involves considerable time, effort, and money. involves reluctance or inability to use the technology. Another disadvantage involves reluctance or inability to use the technology which is predominantly seen in elderly people who are suspicious about technology. Also, when face-to-face interaction is not present, the pharmacist's ability to fully assess patient's condition might be hindered (Poudel & Nissen, 2016). Although it's important for these issues to be considered for the successful implementation of telepharmacy, it holds significant promise as a technology to improve access to pharmaceutical care for people living in rural and remote communities to provide quality pharmaceutical services, such as medication management, dispensing, patient counselling, and drug information to benefit both the rural communities and the hospital or retail pharmacies that deliver these services.

---

#### 4.1.4. Best Practice Example 4: Rural Pharmacy Workforce Retention – Terry et al. (2024)

*Terry et al. (2024) conducted a comprehensive review of the factors that play a role in the recruitment and retention of staff within the pharmacy industry and provide a deeper understanding of what workers search for in a workplace or career in pharmacy.*

With the recruitment and retention of pharmacy staff acting as a major concern for rural communities and health services, in addition to the predicted shortages of pharmacy staff and closures of pharmacies worsening the existing health disparities, studies have attempted to explore and develop a deeper understanding of pharmacists' perspectives about factors influencing pharmacist recruitment and retention to rural and remote communities. The exploratory study, carried out in rural Tasmania and rural Western Victoria, by Terry et al. (2024) provides a deeper exploration of the meaning and experiences of factors that previous research has shown are considered advantageous or challenging to the recruitment and retention of pharmacists in rural areas.

Economic and resource factors included income, incentives and moving allowance where community pharmacists emphasised financial compensation that was above award rates (minimum pay rates and conditions of employment required by law associated with an occupation). Additionally, there were non-monetary incentives in lieu of the higher salaries obtainable in the community setting. These included work flexibility, less financial risk, regular and certain levels of leave, or even longer-term career pathways (Terry et al., 2024). The authors noted how the second group of advantages encompassed practice autonomy and breadth of tasks relating to the ability of pharmacists to be independent, having opportunities to direct their own practice, while also having variety that will promote job satisfaction. It was shown that candidates are drawn to pharmacies or health services where an opportunity to be autonomous exists or is promoted, and where a high level of control over their own practice is viewed as an advantage. It was suggested that it was the diversity of practice that occurs in the rural and remote workplace, compared to that of more metropolitan areas, that enables the development of early-career pharmacists or those seeking to work more rurally. The third group of advantages encompassed community practice support, which included the perception of the community, loyalty to the pharmacy and its pharmacists, along with community recognition. Each of these factors was centred on the relationship and respect the customers and patients had with the pharmacist, the overall pharmacy, and how this translated to ongoing business viability and the overall attractiveness of the pharmacy to a potential employee or business partners. Further, it was suggested that these relationships with healthcare consumers were vital in terms of the sense of belonging to the community itself (Terry et al., 2024).

The challenges associated with the recruitment and retention of pharmacists were also highlighted by the authors. The geographical class of factors included spousal or partner employment opportunities, proximity to schools, social or cultural opportunities, along with transport connections and community size. As such, respondents suggested that it was vital to ensure the needs of the pharmacist's spouse or partner were being met, so that the pharmacist

---

would more fully commit to employment and have a longer tenure in the rural community. Community connection due to the size of a community or connection by way of social or cultural opportunities available were other recruitment and retention factors considered as challenges among pharmacists. Those who were familiar with, or who had grown up in, rural type communities were more likely to indicate they had experienced less challenges when compared with those who had more metropolitan experiences (Terry et al., 2024). The economic and resource class of factors included housing and the cost of schooling for children, as previously discussed. Specifically, participants highlighted that rental accommodation, as a first option for a new pharmacist, was limited. However, if the potential candidate was seeking to purchase a home rather than to rent, it was indicated that there were more options available; however, housing stock was becoming increasingly limited in rural areas (Terry et al., 2024)

Through the voices of pharmacists living and working in rural areas, the findings underscore the multifaceted and complex nature of health workforce planning. Greater pharmacist recruitment and retention is enabled through adequate financial compensation and incentives, along with additional tax incentives for business and health services while examining sustainability innovations. Locum coverage and intern opportunities also require innovations at the local and state level to meet the needs of potential candidates considering rural practice. Lastly, rural practice that offers opportunities for professional development and the capacity to develop a broader scope of skills must be accompanied by efforts to enable schooling and spouse employment, while building community connection and sense of belonging for pharmacists and their families. Overall, the implications of these findings reveal that rural pharmacist recruitment and retention requires a multifaceted approach. Given the complexity and unique features of individual rural communities, solutions to challenges and building strategies will be best served by a whole-of-community ownership and approach (Terry et al., 2024)

## **4.2. Challenges facing the Pharmacy Workforce**

The Royal Pharmaceutical Society (RPS) raised concern on the increasing pressures facing pharmacy teams throughout the UK, including Wales, and the urgent need for action to support their health and wellbeing by discussing the findings of their latest Workforce Wellbeing Survey (Dineshwori, 2025).

The Wales-specific results of this survey highlighted that 88% of pharmacy team members are at high risk of burnout, driven by key factors such as inadequate staffing (73%), lack of work-life balance (46%), financial pressures (45%), and insufficient protected learning time (49%) (Dineshwori, 2025). Additionally, the report identified workplace abuse as a serious concern, as 52% of respondents reported experiencing verbal abuse from the public. Overall, the RPS highlighted the urgent need for action, particularly in three key areas:

**Figure 8**

*Need for actions as stated by the RPS (Dineshwori, 2025; RPS, 2025).*

<b>Investment in the pharmacy workforce</b>
<ul style="list-style-type: none"><li>• Focusing on recruitment and retention</li></ul>
<b>Mandatory protected learning time</b>
<ul style="list-style-type: none"><li>• Ensuring all pharmacy team members have dedicated time for professional development within their job plans</li></ul>
<b>Stronger public messaging</b>
<ul style="list-style-type: none"><li>• To tackle verbal abuse by raising awareness of the evolving clinical role and pressures facing pharmacy teams</li></ul>

Despite these findings being essential to the calls for action stated above, of the 6,598 respondents to the UK's Workforce Wellbeing Survey, only 6% of those were located in Wales (RPS, 2025). Additionally, it is not made clear of where in Wales these respondents were located, and in which localities these specific challenges were faced. Therefore, it highlights the need to conduct a more thorough investigation into the wellbeing of pharmacy staff within Wales itself, and to receive more information on what issues are faced in each location in Wales, for example rural areas in Mid Wales. Yet, the information above gives us an insight into what areas within the pharmacy field require further improvement to ensure the best provision is provided to the public, whilst also prioritising the wellbeing of the staff providing that care and support.

Community Pharmacy Wales (CPW) represents all pharmacies in Wales on NHS matters and is responsible for liaising with the Welsh Government to secure the best possible NHS service opportunities, remuneration and terms (CPW, 2022b). Mark Griffiths, the chairman of CPW said the future of some independent and community pharmacies across the country were uncertain due to rising costs and an increased pressure to deliver more services (Tootill, 2024). With wages rising rapidly, rising costs and pressure to increase the services provided, Mark Griffiths stated that the funding for community pharmacies does not match these demands, leading to cuts in staffing and opening hours (Tootill, 2024). A lack of support to pharmacy staff, can clearly contribute towards staff burnout and a lack of dedicated time for professional development, especially when considering the increase in staffing cuts. Therefore, it's clear that by placing more responsibility on pharmacies to provide primary care services in an attempt to reduce the strain on GPs and other primary care providers, there is a need to ensure that the support and resources available to community pharmacies reflects their expected and increased responsibilities and workload.

Again, CPW highlighted the unprecedented challenges faced by pharmacies and the pharmacy closures across the country despite community pharmacies seeing more patients than any other part of the health service in Wales (CPW, 2024). Since 2020 there have been 27 pharmacy closures in Wales, reducing the access to local NHS clinical services for patients, resulting in the loss of quality jobs, reduced employment and the negative affect on both communities and high streets, particularly in rural areas (CPW, 2024). Although the majority of

---

these closures were in the very north and south of Wales, with on average over 90% of income for a community pharmacy coming from the NHS, the current frailty in funding and unprecedented challenges could cause reduction in business and ultimately leading to more pharmacies becoming non-viable and closing (CPW, 2024). When considering how important each pharmacy in Mid Wales is when considering the provision of vital primary care services in rural areas, where the number of pharmacies are scarce in comparison to more urban areas seen in the north and south of Wales, it is important that everything is done to reduce the likelihood of closures in Mid Wales. Pharmacy closures, or further cuts in Mid Wales could be detrimental to Mid Wales patients, as they might be expected to travel even further to the nearest pharmacy, as they become dependent on these services alongside their GPs, due to the increasing responsibilities placed on community pharmacies to provide for patients.

The workforce challenges have raised concern for the future of community pharmacies in Mid Wales, where there is a need to invest in the pharmacy workforce with a focus on recruitment and retention of pharmacy staff in rural areas. Additionally, these staff should then continue to be provided with the dedicated time for professional development within their job plans, which could again contribute towards the retention of the Mid Wales pharmacy workforce. More work needs to be done to decrease the instances of abuse shown towards pharmacy staff by patients by raising awareness of their important clinical role and the pressures they are already facing as pharmacy teams. Lastly, funding is a large issue faced by pharmacies all over Wales, leading to cuts in opening hours and staff, and ultimately the closure of pharmacies. Current funding for pharmacies does not reflect the ever-increasing responsibilities placed on pharmacy teams to provide for patients, which could be detrimental, especially in Mid Wales, where the overall number of pharmacies in the area is already lacking. To reach the best possible provision of pharmacy services in Mid Wales, these issues need to be reviewed, and steps need to be taken to tackle the unprecedented challenges faced by Mid Wales pharmacies, and across the country.

## **5. Conclusion and Recommendations**

### **5.1. What is the pharmacy provision in Mid Wales and across the UK?**

Pharmacy provision across the UK is extensive (see pages 7-11), with approximately 13,721 registered pharmacies and a growing workforce of around 65,000 pharmacists and 27,000 pharmacy technicians as of June 2025 (General Pharmaceutical Council, 2025). This marks a significant increase from 2011 and 2012 figures (Statista, 2024). UK pharmacies now play an expanded role in primary care through initiatives like the Common Ailments Scheme, which allows pharmacists to assess and treat 27 minor conditions without GP referral and provide medicines free of charge (Welsh Medicines Advice Service, retrieved February 2025). Despite these advancements, the sector faces ongoing challenges such as workforce shortages,

---

in increasing operational costs, fragile funding, and regional inequalities in service provision (see p.10).

Economically, the UK pharmacy industry has shown continuous growth, with a turnover increase from £30 billion in 2012 to £46.7 billion in 2021 and exports valued at £26.1 billion, reflecting its rising importance in both healthcare and the national economy (HM Government, 2012).

In Mid Wales, however, pharmacy provision is significantly more limited (see page 17-23). The region has only 38 registered pharmacies, 19 in Ceredigion, 5 in Gwynedd, and 14 in Powys (SSP, 2025a), spread over an area of approximately 2,000 square miles. This equates to one pharmacy for every 48 square miles, with particularly sparse coverage in Powys, where each pharmacy must serve around 75 square miles. Most pharmacies are part of national chains like Boots UK (n=11), followed by independent community pharmacies (n=7), and Rowland L & Co (n=6).

While Mid Wales pharmacies offer approximately 26 services, service availability varies between locations (see p.19). Additionally, although pharmacy training opportunities exist in Wales, there are none based directly in Mid Wales, requiring aspiring professionals to travel to urban centres in North or South Wales. This lack of local training infrastructure contributes to workforce shortages and highlights the need for investment in education and professional development to strengthen rural pharmacy services.

Overall, while the UK has made strides in expanding pharmacy roles and access, Mid Wales remains underserved, underlining the need for targeted policy and investment to ensure equitable pharmacy provision across the country.

## **5.2. What models of best practice in the delivery of pharmacy services in rural areas can be identified?**

A review of best pharmacy practice revealed four models implementing key strategies for effective rural pharmacy service delivery, addressing both clinical care and workforce sustainability:

### **a) Patient-Centred Medication Therapy Management (Ross & Bloodworth, 2003):**

This model, implemented in the rural Mississippi Delta, integrated pharmacists into patient care through one-on-one consultations, medication reviews, personalized care plans, and point-of-care testing. It targeted chronic disease management (e.g., diabetes and asthma) and utilized electronic health records to enhance provider collaboration (see p.24). The program demonstrated reductions in drug-therapy problems, unnecessary health care visits, and overall

---

service costs, highlighting the impact of pharmacist-led clinical interventions in underserved rural settings.

b) Cloud-Based Prescription Review (Liu et al., 2020):

A cloud-based system deployed in rural China enabled real-time prescription reviews by remote clinical pharmacists (see p.25). This reduced inappropriate prescribing (e.g., wrong dosage, drug interactions) and improved prescription safety. By linking remote pharmacists to under-resourced rural health centres, the model addressed pharmacist shortages and allowed rural patients to benefit from specialist oversight, thereby enhancing pharmaceutical care quality without requiring on-site professionals.

c) Telepharmacy Services (Poudel & Nissen, 2016):

Telepharmacy, using video conferencing, phones, and the internet, provided rural patients with virtual consultations and medication reviews. This model significantly improved access to care for individuals with mobility issues or those living far from the nearest pharmacy (see p.26). It also offered cost-effective service provision, allowing one pharmacist to serve multiple remote locations. Despite technological and user adoption barriers, telepharmacy improved patient satisfaction, continuity of care, and reduced dependence on non-pharmacy healthcare staff for medication-related needs.

d) Rural Workforce Retention Strategies (Terry et al., 2024):

This model emphasized the importance of recruiting and retaining pharmacists in rural areas through a mix of financial incentives, practice autonomy, and community integration (see p.28). Key retention drivers included higher pay, flexible roles, diverse practice opportunities, and strong community ties. Challenges, such as housing shortages, partner employment, and access to schools, were also identified. The study calls for a whole-of-community approach to create sustainable rural pharmacy services that attract and support long-term pharmacist engagement.

Best practice models in rural Pharmacy service delivery emphasize patient-centred care, remote access to specialist pharmacy input and strategic workforce planning. Successful approaches combine clinical service innovation (e.g. MTM, telepharmacy) with structural solutions (e.g. cloud-based reviews, community integrated retention strategies) to overcome the unique challenges faced by rural populations and health systems.

### **5.3. What models of best practice in the delivery of pharmacy services could potentially be adopted across Mid Wales?**

---

To improve pharmacy services across rural Mid Wales, a multifaceted strategy, combining patient-centred care, digital innovations, and workforce retention, can create impactful change:

- **Implement Medication Therapy Management (MTM):** Community pharmacists in Mid Wales could offer one-to-one consultations, medication reviews, and personalized care plans, supported by point-of-care diagnostics and electronic health record integration. This would help identify and resolve drug-related issues, reduce unnecessary clinical visits, and enhance care for chronic conditions like asthma and diabetes.
- **Deploy Cloud-Based Prescription Review Systems:** By linking remote pharmacists with local health centres in Mid Wales through a cloud-based platform, prescription errors can be reduced and clinical oversight strengthened, even where qualified staff are scarce. This model brings specialist input into rural settings without requiring on-site pharmacists. With an increased number of pharmacists now using EPS across Mid Wales, the adoption of a cloud-based prescription review system already seems plausible to adopt across the region.
- **Expand Telepharmacy Services:** Virtual consultations via video or telephone can connect isolated patients, especially the elderly or less mobile, with professional pharmacy support. This approach offers flexibility, cost savings, and enhanced continuity of care across dispersed populations.
- **Focus on Workforce Recruitment & Retention:** Encouraging pharmacists to practice in rural Mid Wales requires more than competitive compensation. Promoting practice autonomy, offering diverse roles, and stimulating community integration are vital. Addressing housing, schooling access, and partner employment concerns will further strengthen retention. A “whole-of-community” approach, where local stakeholders collaboratively support and integrate pharmacists, can foster sustainable practice.

By blending clinical innovation with digital access and local workforce strategies, Mid Wales can transform its pharmacy landscape by enhancing access, improving patient outcomes, and ensuring robust, long-term service provision in rural communities.

## **5.4. Recommendations for Mid Wales**

Therefore, it's worth exploring further how the best practice models identified internationally can be adapted to the context of Mid Wales and used to inform four key recommendations for improving pharmacy provision in the region.

### **5.4.1. Recommendation One: Implement a Cloud-Based Prescription Management System across Mid Wales**

To address prescribing accuracy and alleviate workforce pressures, it is recommended that a cloud-based prescription management system be adopted across pharmacy services in Mid Wales. Drawing on the successful model outlined by Liu et al. (2020), such systems enable

---

remote clinical pharmacists to review and validate prescriptions in real time, significantly reducing prescribing errors and improving the safety and quality of patient care. This approach is particularly well-suited to the rural Mid Wales context, where pharmacist shortages and geographic barriers limit in-person access to specialist expertise.

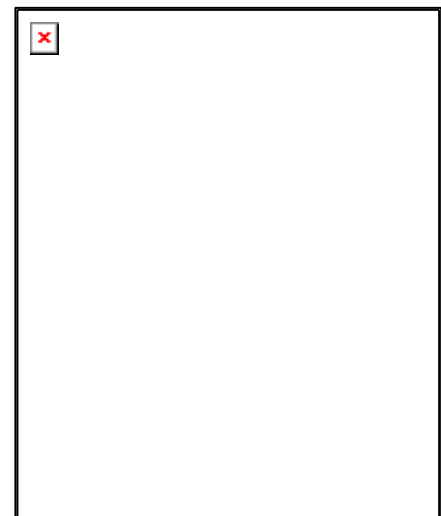
Notably, elements of this model are already in place within Betsi Cadwaladr University Health Board, where a cloud-based notification system alerts clinical teams when patients on critical medications, such as Parkinson’s treatments, clozapine, or immunosuppressants, present at emergency departments. This system improves early medication review, minimises missed doses, and reduces hospital stay duration and clinician workload (RPS, retrieved May 2025). Expanding the use of such digital infrastructure across Mid Wales would enable greater collaboration between dispersed pharmacy teams and health services, supporting remote pharmaceutical care delivery while enhancing patient safety. By scaling this approach regionally, Mid Wales could improve service resilience, reduce medication-related hospital admissions, and ensure equitable access to high-quality pharmacy services across its rural communities.

#### **5.4.2. Recommendation Two: Expand Telepharmacy and Accelerate the Rollout of Electronic Prescription Services**

To enhance accessibility and reduce healthcare inequalities in rural Mid Wales, it is recommended that telepharmacy services be expanded and the EPS be more widely implemented. Telepharmacy offers significant potential for rural patients, particularly elderly, disabled, or low-income individuals, by enabling access to virtual consultations and pharmaceutical care without the need for travel. This is especially important in a region like Mid Wales, where distance and transport limitations can present serious barriers to timely care.

While digital prescribing infrastructure is already being adopted in parts of the region, there is inconsistent uptake. Currently, only 19 pharmacies in Mid Wales are using EPS, with most located in the southern parts of the region, leaving central areas such as South Gwynedd, East Ceredigion, and West Powys underserved (Digital Health and Care Wales, retrieved April 2025). EPS enables prescribers to send prescriptions directly to a patient’s chosen pharmacy, streamlining the dispensing process and reducing the reliance on paper-based systems. Wider implementation would increase convenience for both patients and healthcare staff, improve safety and efficiency, and support medication adherence, particularly for patients on repeat prescriptions.

**Figure 9**  
*Pharmacies using EPS in Mid Wales*



---

Furthermore, combining EPS with telepharmacy consultation services would allow pharmacists from better-resourced urban areas to support rural patients remotely. This would alleviate pressure on small community pharmacies and primary care providers, while ensuring that high-quality pharmaceutical advice remains accessible across the region. Together, these digital innovations represent a scalable and cost-effective way to strengthen pharmacy provision and improve patient outcomes in rural Mid Wales.

#### **5.4.3. Recommendation Three: Strengthen Rural Pharmacy Workforce through Targeted Recruitment, Training Opportunities, and Staff Wellbeing Support**

To address ongoing challenges in the recruitment and retention of pharmacy professionals in Mid Wales, it is recommended that targeted workforce strategies be implemented to attract, support, and retain pharmacy staff in rural areas. Evidence from national and international studies has shown that pharmacy professionals weigh a range of factors when deciding to work in rural settings, including financial incentives, professional development opportunities, and quality of life (Terry et al., 2024). Mid Wales should capitalise on this understanding by creating tailored recruitment packages that offer meaningful incentives for new pharmacists relocating to the region, such as relocation support, housing allowances, or enhanced salary structures.

In parallel, a greater emphasis must be placed on ongoing professional development for rural pharmacy staff. Introducing structured mentoring or peer support programmes would enable pharmacists to continue expanding their clinical skills while feeling supported in their roles. Such programmes can also promote career satisfaction, reduce professional isolation, and foster a culture of continuous learning. Investing in staff wellbeing is equally important and ensuring manageable workloads, flexible scheduling, and access to mental health support services could contribute to workforce sustainability and improve service delivery.

By developing a supportive and attractive employment environment, Mid Wales can build a resilient pharmacy workforce capable of delivering high-quality care across its rural communities.

#### **5.4.4. Recommendation Four: Enhance Information and Innovation**

Improving pharmacy provision in Mid Wales requires not only service expansion but also greater public awareness and the strategic use of innovation. A key recommendation is to increase visibility of available pharmacy services through clear, accessible information, such as an infographic that summarises the specific services, languages offered, and opening hours of each pharmacy across the region. This could be distributed through community health hubs, GP practices, and online platforms to help patients better navigate local provision.

In parallel, innovative solutions, such as the prescription vending machine recently introduced in Dolgellau Pharmacy, should be closely monitored to evaluate their impact on access,

---

efficiency, and patient satisfaction. If successful, such pilots could inform a wider rollout across Mid Wales. Sharing outcomes and lessons learned from these innovations across the region will be essential to encourage best practice, avoid duplication of effort, and ensure equitable access to pharmacy services for all rural communities in Mid Wales.

---

## 6. References

- All Wales Medicines Strategy Group. (2023). *All Wales Common Ailments Service Formulary*. Cardiff: All Wales Therapeutics and Toxicology. Retrieved from <https://awttc.nhs.wales/files/guidelines-and-pils/all-wales-common-ailments-service-formulary-pdf/>
- Anderson, S. (2005). *Making medicines: a brief history of pharmacy and pharmaceuticals*. London: Pharmaceutical Press.
- Anderson, S. (n.d.). *History of Pharmacy in Great Britain 1841-Present*. Retrieved April 2025, from British Society for the History of Pharmacy: <https://www.bshp.org/history-of-pharmacy>
- Aru, P. B., Wankhede, V. K., Rathod, N. A., Surve, V. O., Deshmukh, N. B., & Deshmukh, S. P. (2023). The challenges facing pharmacy in the 21st century: An in-depth. *International Journal of Creative Research Thoughts (IJCRT)*, 11(9), 2320-2882.
- Betsi Cadwaladr University Health Board. (2025, April). *Robotic medication machine trialled in Dolgellau*. Retrieved August 21, 2025, from <https://bcuhb.nhs.wales/news/2025/robotic-medication-machine-trialled-in-dolgellau/>
- British Medical Association. (2024). *Anticipatory prescribing for end-of-life care*. Retrieved April 2025 from British Medical Association: <https://www.bma.org.uk/advice-and-support/gp-practices/prescribing/anticipatory-prescribing-for-end-of-life-care>
- Charac. (2024). *New survey suggests public awareness of pharmacy services as low as 13%*. Retrieved April 2025 from Charac: <https://charac.co.uk/blog/news/new-survey-suggests-public-awareness-of-pharmacy-services-as-low-as-13>
- Christie & Co Pharmacy. (2023). *Pharmacy Market Review 2023: An Insight into the UK Pharmacy Market*. Christie & Co Pharmacy. Retrieved from <https://assets-eu-01.kc-usercontent.com/6bb3df3c-b648-01ae-2357-22fa5c7d5f19/2c2587c6-c843-4f4c-9775-0892d1c00a9f/Christie%20%26%20Co%20-%20PMR%202023.pdf>
- Community Pharmacy England. (2020, February 24th). *Discharge Medicines Service*. Retrieved February 2025, from Community Pharmacy England: <https://cpe.org.uk/national-pharmacy-services/essential-services/discharge-medicines-service/>
- Community Pharmacy Wales. (2022a). *Quick guide to the Discharge Medicines Review (DMR) Service Value*. Retrieved from Community Pharmacy Wales: <https://cpwales.org.uk/wp-content/uploads/2022/09/DMR-Quick-Guide.pdf>
- Community Pharmacy Wales. (2022b). *About Community Pharmacy Wales*. Retrieved from Community Pharmacy Wales: <https://cpwales.org.uk/cpw-negotiations/about-2/>
- Community Pharmacy Wales. (2024). *Ensuring the Sustainability of Community Pharmacy in Wales*. Retrieved from <https://cpwales.org.uk/wp-content/uploads/2024/03/Spring-Conference-2024.pdf>
- Connelly, D. (2022, February 24). *Community pharmacy workforce shortages: the roles and regions most impacted*. Retrieved February 2025, from The Pharmaceutical Journal :

- 
- <https://pharmaceutical-journal.com/article/feature/community-pharmacy-workforce-shortages-the-roles-and-regions-most-impacted>
- Department of Health. (2024, June 27). *Publication of General Pharmaceutical Services for Northern Ireland, Annual Statistics 2023/24*. Retrieved April 8, 2025, from Department of Health - An Roinn Sláinte : <https://www.health-ni.gov.uk/news/publication-general-pharmaceutical-services-northern-ireland-annual-statistics-202324>
- Digital Health and Care Wales. (2025). *Choose Pharmacy User Guide*. Digital Health and Care Wales. Retrieved from <https://cpwales.org.uk/wp-content/uploads/2024/05/USG-CHP-008-Choose-Pharmacy-User-Guide-V21.pdf>
- Digital Health and Care Wales. (n.d.). *Choose Pharmacy*. Retrieved February 2025, from Digital Health and Care Wales: <https://dhcw.nhs.wales/product-directory/our-digital-services/choose-pharmacy/>
- Digital Health and Care Wales. (n.d.). *EPS implementation*. Retrieved April 2025, from Digital Health and Care Wales: <https://dhcw.nhs.wales/product-directory/our-digital-services/eps/eps-for-healthcare-professionals/eps-implementation/>
- Dineshwori, L. (2024, October 21). *Pharmacy Pressures Survey: Nearly all pharmacy staff struggling to cope with workload*. Retrieved February 2025, from Pharmacy Business: <https://www.pharmacy.biz/news/pharmacy-pressures-survey-nearly-all-pharmacy-staff-struggling-to-cope-with-workload/>
- Dineshwori, L. (2025, March 28). *Invest in pharmacy workforce: RPS Wales urges Senedd members*. Retrieved May 2025, from Pharmacy Business: <https://www.pharmacy.biz/pharmacy-workforce-crisis-rps-wales-call-for-action/#:~:text=88%25%20of%20pharmacy%20staff%20in%20Wales%20face%20burnout,Wales%20urges%20urgent%20reforms%20to%20protect%20workforce%20wellbeing.>
- Evans Pharmacy. (n.d.). *Discharge Medicine Review*. Retrieved May 2025: Your Community Health Hub: <https://www.evanspharmacy.wales/discharge-medicines-review/>
- General Pharmaceutical Council. (2025, March 31). *Registers*. Retrieved April 8, 2025, from General Pharmaceutical Council: <https://www.pharmacyregulation.org/registers>
- Giddings, A. (2024, November 15). *Pharmacy managers struggling to pay for medication*. Retrieved February 2025, from BBC News: <https://www.bbc.co.uk/news/articles/c629njz7gd9o>
- HM Government. (2012). *Strength and opportunity 2012: the landscape of the medical biotechnology, industrial biotechnology and pharmaceutical sectors in the UK: annual update - December 2012*. HM Government. Retrieved from <https://assets.publishing.service.gov.uk/media/5a790114ed915d04220670a3/12-p90-strength-and-opportunity-2012.pdf>
- Health and Social Care Board. 2021. *Service Specification Community Pharmacy Care Home Support Service (CPCHSS) Level 1*. Health and Social Care Board. Retrieved from <https://bso.hscni.net/wp-content/uploads/2022/10/Service-Spec-CP-Care-Home-Support-Service-261121.pdf>

- 
- Health and Social Care Northern Ireland. (n.d.). *Pharmacy First*. Retrieved May 2025 from HSCNI: <https://online.hscni.net/our-work/pharmacy-and-medicines-management/community-pharmacy-services/pharmacy-first/>
- Health Education and Improvement Wales (HEIW). (n.d.). *Post-registration foundation pharmacist training programme*. Retrieved April 2025 from HEIW: <https://heiw.nhs.wales/education-and-training/pharmacy/post-registration-foundation-pharmacist-training-programme/#:~:text=This%20programme%20is%20for%20early%20career%20pharmacists%20%28up,any%20sector%2C%20at%20a%20generalist%20post-registration%20foundation%20level.>
- Health Education and Improvement Wales (HEIW). (n.d.). *Pre-registration pharmacy technician (PRPT) programme*. Retrieved May 2025 from HEIW: <https://nhs.wales/tydydysgu.heiw.wales/learning-and-networks/pharmacy/heiw-pharmacy-training-programmes/pre-registration-pharmacy-technician-programme>
- Health Education and Improvement Wales. (n.d.). *Funded Pharmacy Undergraduate Placement Programme (FPUPP)*. Retrieved August 2025, from Health Education and Improvement Wales (HEIW): <https://heiw.nhs.wales/files/pharmacy-eoi-flyers-eng/>
- Health Education and Improvement Wales. (n.d.). *Pharmacy*. Retrieved August 2025, from Health Education and Improvement Wales: <https://nhs.wales/tydydysgu.heiw.wales/learning-and-networks/pharmacy>
- Liu, J., Zhang, Y., Chen, N., Li, L., Wu, Y., Guan, C., Yang, C., Lin, H., Li, Y. (2020). *Remote pharmacy service in primary care: The implementation of a cloud-based pre-prescription review system*, 61(2), 176-182. doi:10.1016/J.JAPH.2020.12.008
- MediWales. (2025, April 7). *Drug dispensing robot hailed as 'ground-breaking'*. Retrieved August 21, 2025, from MediWales: <https://mediwales.com/news/drug-dispensing-robot-hailed-as-ground-breaking/>
- National Careers Service. (n.d.). *Pharmacist*. Retrieved August 2025, from National Careers Service: <https://nationalcareers.service.gov.uk/job-profiles/pharmacist#:~:text=To%20become%20a%20pharmacist%2C%20you%27ll%20need%20to%20complete,a%20pharmacy%20foundation%20degree%20which%20takes%202%20years.>
- National Institute for Health and Care Excellence (NICE). (2014). *Needle and syringe programmes: Overview*. Retrieved April 2025 from NICE: <https://www.nice.org.uk/guidance/PH52>
- National Services Scotland. (2020). *NHS Pharmacy First Scotland: Information for patients*. Retrieved April 2025 from National Services Scotland: <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2020/07/nhs-pharmacy-first-scotland-information-patients/documents/nhs-pharmacy-first-scotland-information-patients/nhs-pharmacy-first-scotland-information-patients/govscot%3Adocument/nhs-pharmacy-first-scotland-information-patients.pdf>
- NHS. (2022). *Clinical Trials*. Retrieved April 2025 from NHS: <https://www.nhs.uk/conditions/clinical-trials/>

- 
- NHS. (2024). *How pharmacies can help*. Retrieved April 8, 2025, from NHS:  
<https://www.nhs.uk/nhs-services/pharmacies/how-pharmacies-can-help/>
- NHS. (n.d.). *Roles in Pharmacy*. Retrieved April 2025 from NHS:  
<https://www.healthcareers.nhs.uk/explore-roles/pharmacy/roles-pharmacy>
- NHS England. (n.d.). *Pharmacy First*. Retrieved May 2025, from NHS England:  
<https://www.england.nhs.uk/primary-care/pharmacy/pharmacy-services/pharmacy-first/>
- NHS Jobs. (2023, February). *Pharmacist - Post-Registration Foundation Training Post*. Retrieved August 2025, from NHS Jobs:  
<https://beta.jobs.nhs.uk/candidate/jobadvert/H9001-23-4403#:~:text=Within%20NHS%20Wales%2C%20early%20years%20pharmacists%20may%20be,The%20pharmacy%20team%20provides%20a%207%20day%20service.>
- NHS Wales. (2021). *Community Pharmacy Local Enhanced Service for Medicines Management in Domiciliary Care Service Specification*. Retrieved April 2025 from Community Pharmacy Wales: <https://cpwales.org.uk/wp-content/uploads/2024/02/2108-SBUHB-Medicines-Mangement-in-Domiciliary-Care-Service-Specification-Aug-21.pdf>  
[https://111.wales.nhs.uk/pdfs/31912\\_Minor%20Ailments%20Services\\_Leaflet\\_English\\_FINAL%20WEB%2021.17.pdf](https://111.wales.nhs.uk/pdfs/31912_Minor%20Ailments%20Services_Leaflet_English_FINAL%20WEB%2021.17.pdf)
- NHS Wales. (2022). *Urgent Medicines Service*. Retrieved April 2025 from Community Pharmacy Wales: <https://cpwales.org.uk/wp-content/uploads/2023/04/NHS-Wales-Urgent-Medicines-Service-v1-FINAL.pdf>
- NHS Wales. (2024). *Community Pharmacy Waste Reduction Service: An NHS National Additional service for Community Pharmacy*. Retrieved April 2025 from Community Pharmacy Wales: <https://cpwales.org.uk/wp-content/uploads/2023/12/Community-Pharmacy-Waste-Reduction-Service-v1-Dec-2023-Final.pdf>
- NHS Wales 111. (n.d.). *Choose Pharmacy: An NHS Wales pharmacy service for adults and children living in Wales*. Retrieved May 2025, from NHS Wales 111:  
[https://111.wales.nhs.uk/pdfs/31912\\_Minor%20Ailments%20Services\\_Leaflet\\_English\\_FINAL%20WEB%2021.17.pdf](https://111.wales.nhs.uk/pdfs/31912_Minor%20Ailments%20Services_Leaflet_English_FINAL%20WEB%2021.17.pdf)
- Office for National Statistics. (2022). *Industry Census Data 2021*. Retrieved April 2025 from ONS: <https://www.ons.gov.uk/datasets/TS060/editions/2021/versions/1#summary>
- Poudel, A., & Nissen, L. M. (2016). Telepharmacy: a pharmacist's perspective on the clinical benefits and challenges. *26*(5), 75-82. doi:10.2147/IPRP.S101685
- Ross, L. R. & Bloodworth, L. S. (2012). Patient-centered health care using pharmacist-delivered medication therapy management in rural Mississippi. *Journal of the American Pharmacists Association*, 802-809. doi:10.1331/JAPhA.2012.10192
- Royal Pharmaceutical Society. (2025). *Workforce and Wellbeing Survey 2024*. Royal Pharmaceutical Society. Retrieved from <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Workforce%20Wellbeing/RPS%202024%20Workforce%20Wellbeing%20Survey.pdf>

- 
- Royal Pharmaceutical Society. (n.d.). *Pharmacy Best Practice*. Royal Pharmaceutical Society. Retrieved May 2025 from: <https://www.rpharms.com/wales/pharmacy-delivering-a-healthier-wales/best-practice-wales>
- Royal Pharmaceutical Society. (n.d.). *Post-registration foundation pharmacist curriculum*. Retrieved August 2025, from Royal Pharmaceutical Society: <https://www.rpharms.com/development/credentialing/post-registration-foundation/post-registration-foundation-curriculum>
- ScrapeHero. (2024). *Top 5 pharmacies in the United Kingdom in 2024*. Retrieved April 2025 from ScrapeHero: <https://www.scrapehero.com/location-reports/5-largest-pharmacies-in-the-uk/#43877>
- Shared Services Partnership. (2025a). *Pharmacies in Wales*. Retrieved April 2025 from NHS Wales Shared Services Partnership: <https://nwssp.nhs.wales/ourservices/primary-care-services/general-information/data-and-publications/pharmacies-in-wales/>
- Shared Services Partnership. (2025b). *Dispensing Contractor Activity by Service*. Shared Services Partnership. Retrieved August 2025, from <https://nwssp.nhs.wales/ourservices/primary-care-services/general-information/data-and-publications/dispensing-contractor-activity-by-service/>
- Sharma, A. (2025, February 17). *Your voice, your evidence: Why the Pharmacy Pressures Survey is so important*. Retrieved February 2025, from The Pharmacist: <https://www.thepharmacist.co.uk/community/views/your-voice-your-evidence-why-the-pharmacy-pressures-survey-is-so-important/>
- Statista. (2024). *Number of pharmacists and pharmacy technicians in Great Britain from 2013 to 2024*. Retrieved from <https://www.statista.com/statistics/418386/pharmacists-and-pharmacy-technicians-in-great-britain-in-england/#:~:text=This%20statistic%20displays%20the%20number%20of%20pharmacists%20and,of%20some%201%2C700%20compared%20to%20the%20previous%20year.>
- Terry, D. R., Peck, B., Phan, H., Hills, D., Bishop, J., Kirschbaum, M., Obamiro, K. O., Baker, E., & Schmitz, D. (2024). Understanding rural pharmacists' perspectives lived experiences and insights associated with rural recruitment and retention. *Rural and Remote Health*, 8687. doi:10.22605/RRH8687
- The Association of the British Pharmaceutical Industry. (n.d.). *Headline pharmaceutical industry statistics*. Retrieved May 2025 from ABPI: <https://www.abpi.org.uk/facts-figures-and-industry-data/>
- The Practice of Health. (n.d.). *Independent Prescribers Service*. Retrieved February 2025, from NHS Wales: The Practice of Health: <https://thepracticeofhealth.nhs.wales/clinics-services/self-help-care/think-pharmacy-first/independent-prescribers-service/>
- Tootill, S. (2024, September 17). *Demoralised pharmacists face uncertain future*. Retrieved May 2025, from BBC News: <https://www.bbc.co.uk/news/articles/cgj44zg2nq0o>
- UCAS. (n.d.). *Choose your Future*. Retrieved August 2025, from UCAS: <https://www.ucas.com/>

- 
- Urick, B. Y., & Meggs, E. V. (2019). Towards a Greater Professional Standing: Evolution of Pharmacy Practice and Education, 1920-2020. *Pharmacy*, 7(3), 98.  
doi:10.3390/pharmacy7030098
- Welsh Government. (2024). *Independent and Supplementary Prescribing in Wales: Guidance for employers and practitioners in NHS Wales*. Welsh Government. Retrieved from <https://heiw.nhs.wales/files/welsh-government-independent-and-supplementary-prescribing-in-wales/>
- Welsh Medicines Advice Service. (n.d.). *Common Ailments Service (CAS) - Information for Members of the Public*. Retrieved February 2025, from Welsh Medicines Advice Service: <https://www.wmic.wales.nhs.uk/common-ailments-service/>
- Welsh Pharmaceutical Committee. (2019). *Pharmacy: Delivering a Healthier Wales*. Cardiff: Royal Pharmaceutical Society Wales. Retrieved from <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Policy/Pharmacy%20Vision%20English.pdf?ver=2019-05-21-152234-477#:~:text=The%20Welsh%20Pharmaceutical%20Committee%20is%20the%20statutory%20advisory,matters%20relating%20to%20pharmacy>