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Evaluation of the Choose Pharmacy common ailments service:
Final report
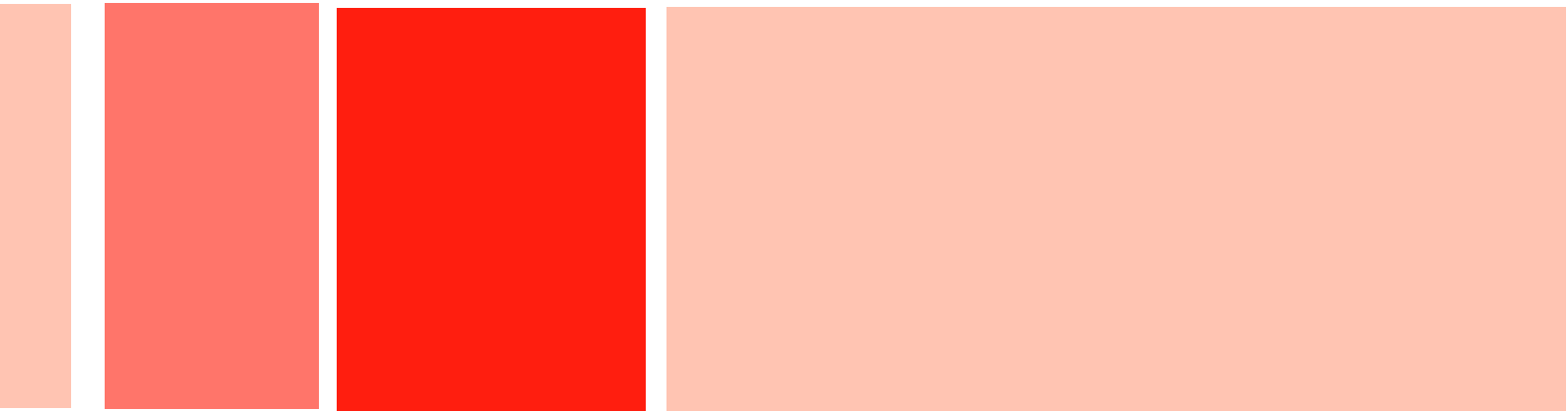
Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government.

Table of contents

Abbreviations

AWPAG   All Wales Prescribing Advisory Group

CPW   Community Pharmacy Wales

DiD   Difference in Difference

LHB   Local Health Board

NWIS   NHS Wales Informatics Service

OOH   Out of Hours

OTC   Over the Counter

SAIL   Secure Anonymised Information Linkage

WECS   Welsh Eye Care Service

Executive summary

1. The manifesto commitment to establish community pharmacy as the first port of call for common ailments was embedded as a Programme for Government commitment in 2011. In March 2013, the Welsh Government announced its intention to launch a national common ailments service for Wales.

2. The new service (Choose Pharmacy) involves the assessment of a patient by an authorised pharmacist and the selection and supply of treatment from a list of medicines covering a defined range of common ailments. Patients are also referred to another health service when appropriate. Treatment supplied is free of charge to individuals. This removes the incentive for patients to visit the GP in order to receive NHS treatment for their common ailment. The intended impacts of Choose Pharmacy include:

   - Improving access to advice and treatment on common ailments – making the pharmacy the first port of call for advice on such ailments;
   - Making better use of pharmacists' skills and resources;
   - Promoting more appropriate services in primary care; and
   - Increasing capacity and resilience in primary care.

3. The roll out of Choose Pharmacy will follow a phased approach, incorporating evaluation into the process at each stage to help shape the national service. Roll out began in October 2013 with the implementation of pathfinders in Cwm Taf and Betsi Cadwaladr Local Health Board (LHB) areas.

4. Nineteen pharmacies are delivering the pathfinder service in Betsi Cadwaladr; they include a mix of single and multiple outlet pharmacies and a supermarket. All 13 pharmacies within the Cynon Valley locality of Cwm Taf are involved; they are a mix of single and multiple outlet pharmacies (including one pharmacy with eight outlets operating the service) and larger chains.

5. This document sets out the findings of the final evaluation of these pathfinders. It also sets out the costs and benefits associated with the roll out of a national service. Evidence gathered came from multiple sources:

   - eCAS data (the pathfinder IT system for recording consultations on common ailments) covering data relating to all Choose Pharmacy registrations and consultations undertaken between September 2013 and November 2014;
   - Semi-structured in-depth interviews with pharmacists, GP practices and other stakeholders conducted between November 2014 and February 2015;
   - A survey of pharmacists and GP practices conducted in November 2014 – January 2015;
   - Focus groups with 18 Pharmacists in Betsi Cadwaladr and nine GP practices in Cwm Taf, in January and March 2015, respectively;
   - GP prescription data; and

- The SAIL (Secure Anonymised Information Linkage) databank[1], which anonymously record-links routinely collected data held in healthcare and social datasets.

Key findings

Pharmacy Activity

6. Demand for the service has continued to rise – driven largely by seasonal increases in the number of consultations. A total of 2,074 consultations have been undertaken through the service between September 2013 and October 2014, with demand peaking in June 2014.

7. Pharmacy engagement with service varies, with 54% (1,222) of all consultations undertaken by six pharmacies. In contrast, 12 pharmacies have undertaken, on average, less than two consultations per month during the same period. However, 14 pharmacies had experienced over a 50% rise in the number of consultations undertaken between May and October, relative to the consultations undertaken during the first six months of the operation of the service – suggesting that engagement is increasing with time.

8. Capacity to deliver the service remains a key factor driving levels of pharmacy engagement with the service. Pharmacists with a relatively low number of consultations typically reported having limited capacity to deliver the service. The availability of two pharmacists on site was not the sole factor for capacity to deliver the service. Several pharmacists noted that their workforce model had enabled them to 'move away from the dispensing bench'. Specifically, pharmacy technicians had been taking on more traditional pharmacist responsibilities, freeing the pharmacist to deliver a greater level of patient services.

9. Pharmacists consulted continued to be divided with respect to the role they should play in raising awareness and creating demand for the service. However, stakeholders, including GP practices, considered that the pharmacist-led awareness-raising with patients, and ongoing promotion of the service to GPs had helped to embed the service.

10. Pharmacists' confidence in delivering the service and managing patient expectations is growing, but is dependent on the level of experience in undertaking consultations. Furthermore, the duration of consultations vary but a trend for shorter consultations has established as the service has embedded and pharmacists have become more experienced in delivering the service (with a median duration of a consultation of two minutes 20 seconds). This average consultation duration represents the amount of time a pharmacist is logged on to the eCAS system. It does not include additional time spent by the pharmacist dispensing treatment and/or other activities that do not require the pharmacist to be logged on to eCAS. It therefore underestimates the duration of a consultation.

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[1] The SAIL databank anonymously record-links routinely collected data held in healthcare and social datasets at the Health Information Research Unit (HIRU), Swansea University.

Indeed a limited number of pharmacists interviewed reported that consultations often lasted between 10 – 15 minutes.

GP engagement and referral pathways

11. GP practices continued to vary in their levels of engagement. A minority of pharmacists considered that GP practices had become more supportive of the service. Practices that had been involved in the design of the service prior to its implementation were more likely to be engaged. Practices that had existing relationships with their local pharmacists, and/or that had stretched capacity to respond to the growing demand for GP consultations, especially in localities in which there was only one GP practice, were also often more likely to be engaged and referring patients. The key perceived barrier to engagement was understanding of the service.

12. Despite the variable levels of engagement, the majority of patients using the service had been referred from the GP practices. Furthermore, the majority of stakeholders consulted reported that patients were most likely to hear about the service from their GP practice. Few pharmacists reported changes in the levels of GP referrals since the interim evaluation.

13. The drivers and barriers to GP practice referrals mirror those observed for GP practice engagement (see paragraph 11). Additionally, and as was observed in the interim evaluation, the existing operation of a patient triage system together with practice managers' and receptionists' understanding of the service were identified by pharmacists as important factors driving referral to Choose Pharmacy.

14. Inappropriate referrals from GP practices have continued to occur– specifically referrals of patients with conditions that are not included within the service, or patients who are ineligible to receive treatment through the service (for example, due to age restrictions). Few pharmacists reported a decline in inappropriate referrals. Limited understanding of eligibility criteria and the common ailments in scope, and formulary restrictions are the main cause of inappropriate referrals. The result of inappropriate referrals is typically referral back to the GP – with a potentially negative patient experience of the service.

15. Increasingly pharmacists and GP practices have been adopting proactive approaches to managing inappropriate referrals. A greater proportion of pharmacists and GP practices reported that they had worked together to improve appropriate referrals, compared with the interim findings. The majority of stakeholders considered that training for GPs, practice managers and receptionists was required to improve awareness and understanding of the service – and that such training should be incorporated into plans to roll-out the service.

16. Other referral routes into the service are becoming more common. The majority of pharmacists reported that 'word of mouth' consultations were increasing. Referral pathways between the Welsh Eye Care Service (WECS) and Choose Pharmacy have been established since the interim evaluation. Accordingly, several pharmacists highlighted an increase in referrals from opticians; they considered the

referral pathway to and from WECS to be working well. However, the majority of pharmacists reported limited or no 'real involvement' from health care professionals, other than GP practices.

17. Referral pathways from out of hours services (OOHs) continued to be identified as being essential for rural localities – due to the distance to travel for OOHs surgeries. However, several pharmacists noted that referral pathways between OOHs services had yet to be established.

Profile of service users and most common ailments treated

18. Parents (most commonly mothers) are the highest users of the service – seeking advice and treatment for children's common ailments. The age profile of patients beyond this age group varies across the two pathfinders. There is limited correlation between the age profile of service users and that of the population as a whole. This could reflect the general demand for health services / the burden of ill health. The findings could also suggest that different age groups are either more or less aware of the service, or are more or less likely to engage with the service. Consistent with the wider use of pharmacies, women are more likely than men to use the service.

19. Uptake varies significantly by condition, with the top five most common ailments accounting for 68% (1,405) of consultations. Consistent with the seasonal influence on demand, the most common condition presented across both pathfinders was hay fever, it accounting for 24% (507) of all consultations. Conjunctivitis and head lice are the second and third most common conditions, respectively.

20. The percentage of patients that have used the service on more than one occasion (for the same or a different ailment) has increased by 2.5 percentage points over the last six months of the operation of the service. The majority (74%, 193 out of a total of 261) of these repeat users have used the service on two occasions.

21. Over 40% of repeat appointments were for unrelated conditions. Patients using the service for a variety of ailments can be considered a positive sign; it demonstrates the types of common ailments they are willing to see the pharmacist for, rather than the GP.

22. Patients who normally purchase over the counter treatment (OTC) do not appear to be converting to Choose Pharmacy – despite concerns that this would happen as awareness of the service increased.

Patient awareness, understanding and engagement

23. Stakeholders interviewed believed that the majority of patients held positive views about the service, particularly with respect to improved access to advice and treatment. Stakeholders also noted that, upon hearing about the service, the majority of patients were enthusiastic about using it.

24. The majority of pharmacists reported that patients become aware of the service through the GP practice. In contrast to the relatively low number of repeat users of

the service, pharmacists also considered that prior experience of using the service was a common route by which patients knew about the service.

25. Stakeholders perceived that patient awareness has improved, but it was still considered to be low. Stakeholders noted the value of the targeted promotion activities undertaken in late spring focusing on the most common conditions and seasonal conditions. Despite the rising demand, stakeholders were clear about the need for continued efforts to raise awareness of the service. This included making better use of patient access points across the community and a dedicated promotion campaign.

26. Pharmacists consistently reported that a significant proportion of patients misunderstood the service. Misunderstandings about the availability of antibiotics and eligibility for the service (specifically age restrictions) were frequently cited. In some cases, pharmacists and GP practices believed that these misunderstandings had resulted in a poor experience of Choose Pharmacy – which in turn impacted on the reputation of the service, and future demand.

27. Some pharmacists are managing patient expectations proactively, providing advice about what the service does and does not offer prior to undertaking a consultation, and explaining to patients why some treatment options are unavailable. As their understanding of the service grows, GP practices are also helping to manage patient expectations. All stakeholders noted the importance of an ongoing focus on ensuring patients are not only aware of Choose Pharmacy, but that they also understand what the service can (and cannot) offer.

Drivers for patient engagement

28. Improved access was identified by pharmacists and GP practices as the key driver for patients seeking a consultation at the pharmacy. However, all stakeholders highlighted that pharmacy capacity to deliver a consistent service affects accessibility – which in turn influences patient and GP perceptions of Choose Pharmacy. Capacity during busy dispensing time, or when an un-accredited locum is providing cover, prevents the pharmacy from offering timely consultations. Several pharmacists and GP practices noted that they had worked together to help address potential access issues, specifically identifying times when pharmacist capacity to offer a timely consultation could be limited.

29. Pharmacists also identified that a successful prior experience of the service and recommendations from a GP increased the likelihood of patients engaging with the service. In contrast, GP practices identified trust in the quality of care provided in the pharmacy setting to be important. GP practices, and to a lesser extent, pharmacists, also considered awareness that treatment recommended through the service would be free to be a key driver.

Barriers for patient engagement

30. Preference to see a GP and perceived severity of the condition were identified as the key barriers to patient engagement by both pharmacists and GP practices. Both stakeholder groups also considered that restrictions associated with the formulary could decrease the likelihood of patients using the service.

31. GPs and pharmacists consulted continued to highlight the importance of behavioural change. All stakeholders noted that significant cohorts of patients will prefer to see the GP for advice and treatment for common ailments. Changing the behaviour of these patients was considered to be particularly challenging – especially if they have on occasion visited the pharmacy at a time when the pharmacist was unavailable to undertake the consultation.

Stakeholder perceptions of the outcomes delivered

32. While stakeholders considered that the delivery of the service has yet to make an impact at scale, many considered that the pathfinders have delivered positive outcomes.

33. The majority of pharmacists reported that being involved with Choose Pharmacy had given them the opportunity to apply and develop further their existing skills and expertise – increasing their job satisfaction. Pharmacists also considered that delivering the service had expanded their role.

34. Choose Pharmacy provides patients with better access to advice and treatment for common ailment services. Pharmacists, and to a lesser degree GP practices, repeatedly reported that patients welcomed the ease of access to the service.

35. Partnership working and relationships between GPs and pharmacists are being strengthened, albeit to varying degrees across the different localities. The majority of pharmacists and GPs reported that relationships between GPs and pharmacists had been strengthened. A minority also considered that relationships with other health care professionals and the integration of health care services had improved.

36. The service is helping to increase public understanding of support available at the pharmacy. The majority of pharmacist and GP practice survey respondents considered that the service had improved patients' trust in the quality of care provided by pharmacists, as well as improving awareness of the services offered by the pharmacy.

37. The majority of pharmacists responding to the survey also felt that patients now see the pharmacy as the 'first port of call for advice and treatment for common ailments'. Nonetheless, several pharmacists reflected that volumes of patients increased on days when the GP practices were closed or at times when practices are particularly busy. This could suggest that a proportion of patients will be more inclined to use the service as an alternative when they are unable to access the GP practice, rather than using it as the 'first port of call.' In agreement with this suggestion, the majority of GP practices surveyed considered that no shift in patient behaviour in this respect had been observed.

38. The majority of pharmacists and GP practices responding to the survey also believed that the service had led to improvements in patients' understanding of when and how to self-care for common ailments. The increase in the proportion of patients that experience symptoms for a longer period of time (prior to seeking a consultation) could also suggest a positive shift towards self-care.

39. The findings from the evaluation indicate that the service is maintaining the quality of care for patients seeking advice and treatment for common ailments. Pharmacists noted that they had referred few patients back to the GP for reasons other than inappropriate referrals. GP practices' observations regarding why patients were referred back by pharmacists to the GP also indicated that the majority had been inappropriately referred in the first place. However, several stakeholders noted that patients' perceptions about the quality of the service is influenced by whether they consider they were given the 'right' treatment for their common condition.

40. The majority of stakeholders consulted considered that Choose Pharmacy had supported a reduction in the demand for GP consultations for advice and treatment for common ailments. The majority of pharmacist surveyed considered that Choose Pharmacy had led to more appropriate use of the pharmacy, GP and other health care services for common ailments. They also believed that it had reduced the demand on GP consultations for advice and treatment for common ailments. Similar responses were observed from GP practice respondents.

Impact and economic analysis

41. The analysis of the impact of pathfinders on the demand for GP consultations has been undertaken using a Difference in Difference (DiD) approach, using prescription data. The analysis compares the changes in the GP prescriptions in the pathfinder areas to the change in GP prescriptions in a comparator group. The comparator groups form a counterfactual case to assess what would have happened in the two pathfinders areas had Choose Pharmacy not been introduced.

42. Several comparator groups were initially selected for each pathfinder. Following detailed analysis of the trends in GP prescriptions in these comparator sites, and DiD analysis, two suitable comparator areas were selected for the subsequent analysis of the costs and benefits of the pathfinders:

   – Betsi Cadwaladr (Arfon, Dwyfor and Meirionnydd): the remaining areas of Betsi Cadwaladr; and
   – Cwm Taf (Cynon Valley): Merthyr Tydfil.

43. Overall, there were few statistically significant results from the DiD analysis using prescription data. The power of the study to assess impact was limited (i.e. the study's ability to detect a difference, if the difference in reality exists) due to a relatively small sample size. This is in part due to the fact that the service has only been in operation for 12 months and involved 31 pharmacists. The service also focuses on a limited number of ailments compared to the wider range of ailments for which patients seek advice and treatment from a GP. Therefore the impact of the Choose Pharmacy pathfinders was anticipated to be low, and a statistically significant result would not necessarily be expected.

44. Nonetheless, analysis of the impact using the two comparator groups discussed above **suggest a small reduction in the number of prescriptions issued by**

GPs following the introduction of the Choose Pharmacy. Furthermore, the effect of Choose Pharmacy appears to have increased over time.

Cost and benefit analysis of the pathfinders

45. Given uncertainty associated with estimating the benefits of the pathfinders (in particular the extent of the impact) scenario analysis has been undertaken to estimate the impact of the pathfinders on the number of GP consultations, and examine the benefits associated with the Choose Pharmacy service. Three scenarios were modelled using the findings from the DiD analysis. The number of GP appointments avoided per month across both pathfinder sites range between 111 and 1,658 (with 547 appointments being the most realistic estimate).

46. There is good information on the costs associated with providing the pathfinder services. The cost of providing Choose Pharmacy from September 2013 to August 2014 was an estimated £565,000. This cost includes the total cost of the eCAS computer system developed for the Choose Pharmacy programme, which is valued at £300,000.

47. Three scenarios were analysed to illustrate the costs and benefits of Choose Pharmacy (each one corresponded to the modelled impact of the service on GP appointments set out in paragraph 45 – i.e. assuming that the number of GP appoints avoided per month across both pathfinder sites was either: 111, 547 or 1,658). In two of the scenarios analysed, the Choose Pharmacy programme provides a positive return on investment over the next five years. The best estimate of the cost of delivering Choose Pharmacy over a five year period in both pathfinder sites is £1.1 million and the benefits range from £0.3 million to £4.3 million depending on the scenarios modelled, with the most realistic estimate of the benefit being £1.4 million.

48. In order for Choose Pharmacy to provide a positive return on investment over the next five years, a reduction of 0.25 percentage points is required in the proportion of people attending the GP and receiving prescription items in both pathfinder sites. This equates to a total decrease of 427 GP appointments and prescription items per month (across both pathfinder sites) in the first year. This is subject to the following caveats:

   ■ While the estimated total decrease in GP appointments required to break even is less that the current demand for the service, it is important to note, the required decrease in GP appointments does not necessarily require a corresponding increase in demand for Choose Pharmacy. For example, the promotion of self-management of conditions by the service could reduce the number of GP appointments without a corresponding Choose Pharmacy appointment.

   ■ The analysis assumes that the total cost of developing the eCAS computer system is covered by the two pathfinder sites. Given that this is a pilot programme prior to a national roll out, it is unlikely that the cost of the eCAS system is borne entirely by the two pathfinder sites. If only a proportion of cost

of developing the eCAS system covered by pathfinders, the number of GP appointments needed to break even would be significantly lower. There is uncertainty regarding the frequency of maintaining and updating the eCAS system, such costs have therefore been excluded from the analysis.

- Finally the analysis assumes that only one prescription item is issued per GP appointment, whereas GPs are likely to issue more than one item per appointment in some instances. If GPs issue more than a single prescription item per appointment, the break-even point will be reduced.

Sensitivity analysis

49. Sensitivity analysis has also be undertaken in which the following assumptions used to calculate the costs and benefits reported above were varied:

- The costs associated with GP appointments;

- The impact of the programme on GP appointments;

- The cost of prescription items;

- The travel time for patients travelling to GP appointments;

- The waiting times and duration of appointments; and

- The growth rate of GP and Choose Pharmacy appointments.

50. The sensitivity analysis reveals that there is a wider variation in the benefits than the costs. This is driven by the uncertainty around the impact of the Choose Pharmacy programme on the number of GP appointments and GP prescriptions in each pathfinder site.

51. Under the low estimate of the assumptions, none of the three scenarios would cover the cost of the pathfinders over a five year period. However, under the best and high estimate of the assumptions, the benefits outweigh the costs.

Modelling of the costs and benefits of national roll-out

52. To assess the roll out costs and benefits, each GP cluster in Wales was analysed to see if it was most closely aligned to either the pathfinder site in Betsi Cadwaladr or Cwm Taf. This analysis was based on: Age; Deprivation categories; Drivetime bands; Rural/urban classification and Burden of disease for five diseases (Hypertension, Asthma, Diabetes; Coronary Heart Disease; and Chronic Obstructive Pulmonary Disease).

53. Each GP cluster was then assigned as most closely matched to either the Betsi Cadwaladr site or the Cwm Taf site. This was done in order to estimate the potential number of pharmacies that would deliver Choose Pharmacy in each cluster; the number of appointments and prescription items that would be issued through the service in each cluster; and the estimated number of GP appointments and prescriptions that would be avoided due to Choose Pharmacy in each cluster.

54. The following assumptions were applied to the modelling of the roll out of the Choose pharmacy service:

- 541 pharmacies deliver Choose Pharmacy (approximately 80% of all Community Pharmacies);

- The estimated number of appointments and prescription items that would be issued through the service in each cluster; and

- The number of Choose Pharmacy appointments and prescriptions was divided by the population in the pathfinder sites, and the most appropriate ratio was applied to the population in each GP cluster to estimate the potential number of Choose Pharmacy appointments and prescriptions issued in each cluster.

- The percentage point changes in the proportion of the population no longer attending a GP appointment for a common ailment observed in the Pathfinders have been applied to the population in each GP cluster area. This estimates the number of GP appointments which would be avoided and the value of potential benefits of Choose Pharmacy.

- The roll out costs do not include any costs for setting up the eCAS system, as this has already been developed. It does not include a payment to the LHB either. Finally, it does not include the payment that was made to pharmacies to take part in the pathfinders.

55. The analysis showed that based on the assumptions and modelling undertaken, the best estimate of the costs of the national roll-out is £11 million, assuming that approximately 80% of all community pharmacies in Wales deliver the Choose Pharmacy at a level that is consistent with that observed in the two pathfinder sites. However, there are large benefits which could be generated by the roll out. The majority of these benefits would be accrued as a result of a reduction in GP appointments. The analysis suggests that the best estimate of the benefits of delivering Choose Pharmacy over a five year period ranges from £5 million to £75 million depending on the scenarios modelled, with the most realistic scenario suggesting a benefit of £43 million.

56. Assuming that other GP cluster areas were to exhibit similar performance patterns as those observed in either Betsi Cadwaladr or Cwm Taf and 541 pharmacies signed up to take part, each pharmacy would have, on average, to undertake just under 600 Choose Pharmacy appointments and issue more than 850 prescription items over the five year period. The number of people attending the GP and receiving prescription items would need to reduce by 0.15 percentage points for the service to break even. This equates to a total of just over 27,000 GP appointments and prescription items over the five year period.

57. The number of prescriptions required to break even varies in the sensitivity analysis of the national roll out. In the low estimate, with 272 pharmacies delivering the service, each pharmacy would have on average just under 600 appointments and issue fewer than 800 prescription items over the five year period. The proportion of the population attending the GP for advice and treatment for common ailments would need to reduce by 0.075 percentage points for Choose Pharmacy

to break even. For the high estimate with 651 pharmacies taking part, each pharmacy would have to undertake on average over 650 appointments and issue nearly 950 prescription items over the five years. To break even the proportion of the population who attend the GP needs to reduce by 0.18 percentage points.

Conclusions

58. The final evaluation findings demonstrate that the Choose Pharmacy pathfinder service has been well designed and delivered. While stakeholders considered that the delivery of the service has yet to make an impact at scale, many considered that the pathfinders have delivered positive outcomes, and would welcome the continuation of the service.

59. Demand has continued to rise as awareness has improved and the service has been embedded. While engagement by pharmacists and GP practices has been variable, there are examples of high activity (with respect to consultations) and effective practice in delivering the service. Lessons learned regarding the conditions for success have been identified, these include:

- GP and pharmacist engagement in the proactive promotion of the service – GP engagement in this respect is particularly important – not only to ensure patients are referred but also to promote patient confidence in the service;

- Existing relationships between pharmacies and GP practices – not to only to support awareness raising to create demand for the service, but also to ensure that challenges and issues can be resolved in a timely and effective manner;

- Pharmacy capacity to deliver the service – including the use of workforce models that enable the pharmacist to focus on delivering services; and

- GP practices' understanding of the service to ensure appropriate referrals and existing use of a triage system – in this respect, a focus, in the first instance on those common ailments most frequently presented by patients has been identified as being particularly effective in helping to establish the service.

60. Support provided by the Local Health Boards has continued to be instrumental to the operation and continuous improvement of Choose Pharmacy. In particular, the Local Health Boards have facilitated relationship building and supported pharmacists and GPs as they have begun to engage with the service over the last six months.

61. Consistent with the interim findings, the success of the scheme has continued to hinge upon good local relationships. This is not only to support awareness-raising and understanding of the service (and what it can and cannot offer), but also to ensure that challenges and issues can be resolved in a timely and effective manner.

62. Finally, if the roll out of Choose Pharmacy can follow the same pattern as experienced in the Betsi Cadwaladr and Cwm Taf pathfinder sites (in terms of the number of consultations) the full evaluation of the Choose Pharmacy pathfinders provides evidence that the benefits of the services outweigh the costs.

Recommendations

63. The Welsh Government, and the pathfinder LHBs, working with key stakeholders and partners (for example NHS Wales Informatics Service (NWIS)) are working to improve the usability of the eCAS system and reviewing the Choose Pharmacy formulary. Continued focus on these areas will be important for the continuous improvement of the service – the refinement of the eCAS system in particular will improve the day-to-day operation of the service for pharmacists.

64. Drawing on the lessons learned from the evaluation of the choose pharmacy service we have identified 14 recommendations to support the subsequent development and roll-out of Choose Pharmacy service. These recommendations are presented below.

Raising awareness and understanding of the service

- Promote and raise awareness of the service with the patients and the public from the outset – but adopt a targeted approach.

- Ensure that the awareness raising and promotion activity also reinforces understanding of the service to help manage patients' expectations.

- Use multiple channels to promote and raise awareness of the service.

Approach to rolling out Choose Pharmacy

- Consider the merits of adopting a more formal approach to selecting pharmacies to deliver Choose Pharmacy.

- Consider the value in implementing subsequent pathfinders to test the service and establish its cost effectiveness in different contexts.

- Continue to deliver the service in the two pathfinder areas, but consider the merits of adopting a more selective approach with respect to which pharmacies offer the service.

Supporting pharmacists and GPs to engage with, and embed the service

- Encourage a focus in the first instance on those common ailments most frequently presented by patients.

- Consider the merits of convening joint awareness raising/briefing sessions for pharmacists and GP practices.

- Develop training/e-learning module for GP practices.

- Promote and raise awareness of the Wales Centre for Pharmacy Professional Education (WCPPE) e-learning training model and the value of Choose Pharmacy accreditation.

- Ensure that there is Local Health Board resource to facilitate collective action locally.

- Consider possible levers to drive GP engagement in Choose Pharmacy – include exploring opportunities to embed engagement with Choose Pharmacy in Cluster Network Action Plans

Other

- Consider opportunities to extend referral pathways to and from the service.

- Identify opportunities to promote self-management of common ailments as part of the Choose Pharmacy service.

1   Introduction

The manifesto commitment to establish community pharmacy as the first port of call for common ailments was embedded as a Programme for Government commitment in 2011. In March 2013, the Welsh Government announced its intention to launch a national common ailments service for Wales.

The new service, ('Choose Pharmacy') involves the assessment of a patient by an authorised pharmacist and the selection and supply of treatment from a list of medicines covering a defined range of common ailments (see Annex 1 for further information about the ailments in scope and associated restrictions). Patients are also referred to another health service when appropriate. Treatment supplied is free of charge to individuals. This removes the incentive for patients to visit the GP in order to receive NHS treatment for their common ailment.

The intended impacts of Choose Pharmacy include:

- Improving access to advice and treatment on common ailments;
- Making better use of pharmacists' skills and resources;
- Promoting more appropriate services in primary care; and
- Increasing capacity and resilience in primary care.

The roll out of Choose Pharmacy is following a phased approach, incorporating evaluation into the process at each stage. Roll out began in October 2013 with the implementation of pathfinders in Cwm Taf and Betsi Cadwaladr Local Health Board (LHB) areas (See Annex 2 for a map of the pathfinder sites).

Nineteen pharmacies are delivering the pathfinder service in Betsi Cadwaladr; they include a mix of independent and multiple outlet pharmacies and a supermarket. All 13 pharmacies within the Cynon Valley locality of Cwm Taf are involved; they are a mix of single and multiple outlet independent pharmacies (including one pharmacy with eight outlets operating the service) and larger chains.

This document sets out the findings of the final evaluation of these pathfinders. It has been produced by ICF, which is undertaking the evaluation.

1.1   Aims and objectives of the evaluation

The aims and objectives of the evaluation are to assess the implementation and effectiveness of the pathfinder service. Specifically, exploring the extent to which Choose Pharmacy has:

- Improved access to advice on, and treatment for, common ailments from community pharmacies;
- Promoted appropriate use of GP and pharmacy resources;
- Maintained or improved quality of care and patient outcomes; and,
- Delivered a cost-effective model for the management of common ailments.

The evaluation is also required to explore and, as far as possible, establish causal links between Choose Pharmacy and any observed changes in outcomes. To inform wider roll-out of the service, the evaluation must also draw conclusions about the benefits/disadvantages of operating a national common ailment service.

The approach to the evaluation comprises of three key stages:

- **Scope and evaluation design –** to develop the evaluation framework;
- **An interim evaluation** – focused primarily on understanding the processes put in place to deliver Choose Pharmacy and whether the service has been implemented as expected; it also captured evidence of emerging outcomes; and
- **A full evaluation** - building on the interim findings to inform the full evaluation of the service 12 months after inception – and comprising an assessment of impact and analysis of costs and benefits.

A detailed scoping report setting out the evaluation framework was submitted to the Welsh Government in March 2014. The interim evaluation, including a literature review of similar services was published by the Welsh Government in January 2015. The Choose Pharmacy logic model, which underpins the evaluation framework, is set out in Annex 3.

1.2   Evidence sources for the final evaluation

Evidence gathered at this final stage came from multiple sources:

- eCAS data (the pathfinder IT system for recording consultations on common ailments) covering data relating to all Choose Pharmacy registrations and consultations undertaken between September 2013 and November 2014;
- Semi-structured in-depth interviews with pharmacists, GP practices and other stakeholders conducted between November 2014 and February 2015 (see Annex 4 for a copy of the topic guides);
- A survey of pharmacists and GP practices conducted between November 2014 and January 2015;
- Focus groups with 18 Pharmacists in Betsi Cadwaladr and nine GP practices in Cwm Taf, in January and March 2015, respectively;
- GP prescription data; and
- The SAIL (Secure Anonymised Information Linkage) databank[2], which anonymously record-links routinely collected data held in healthcare and social datasets.

1.2.1   Engagement with stakeholders

All pharmacists involved in the delivery of the Choose Pharmacy service were invited to participate in a semi structured telephone interview to capture their experiences of delivering the service. All GP practices from the Betsi Cadwaladr pathfinder area and seven GP practices (the details of whom we obtained from the LHB) from the Cwm Taf pathfinder were also invited to participate in a telephone interview.

Interviewees were self-selecting. Only a limited number of pharmacists and GP practices opted to participate in a semi-structured in-depth telephone interview (see Table 1.1). In response, two online surveys were developed including open and closed questions - one for pharmacists, the other for GP practices. Pharmacists and GP practices that had not responded to the initial round of invitations to participate in a telephone interview were invited to complete the online survey. An additional 33 GPs and GP practice managers in Cwm Taf were

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[2] The SAIL databank anonymously record-links routinely collected data held in healthcare and social datasets at the Health Information Research Unit (HIRU), Swansea University.

also invited to complete the online survey. In order to try and elicit as high a response rate as possible and give participants several opportunities to take part, each pharmacy and GP practice was contacted up to four times.

In total 19 pharmacists and 13 GP practices participated in a telephone interview, completed the online survey or were interviewed face to face (Table 1.1). Three additional interviews were undertaken with representatives from the pathfinder health boards and Community Pharmacy Wales. The stakeholder consultation (comprising interviews and the survey) was undertaken between November 2014 and March 2015.

Table 1.1 Summary of stakeholders involved in the final evaluation

	Betsi Cadwaladr			Cwm Taf			Total
Stakeholder type	Telephone interview	Online survey	Face to face	Telephone interview	Online survey	Face to face	
Pharmacy (Chain)	2	4	3	1	5		**15**
Pharmacy (Independent)	2	1	0	0	1		**4**
GP practice	0	5	0	2	6		**13**
Other	1	0	2	0	0		**3**
Total	**5**	**10**	**5**	**3**	**12**		**35**

In addition to those pharmacists and GP practices who provided individual feedback via telephone, online survey or face-to-face, group feedback was received through two focus groups held by ICF. One workshop was held at a Pharmacy Development Group meeting in Betsi Cadwaladr in January, attended by 18 pharmacists. A second focus group was then held in February in Cwm Taf involving nine GP practices.

1.2.2 *Evidence used to assess the impact the Choose Pharmacy service*

Two data sets were used to assess the impact of the Choose Pharmacy service:

■ GP prescription data: provided to ICF by the LHB. The data extract (based on GP practice names) was derived from the dataset submitted by the LHB to the NHS Wales Shared Services Partnership which is used to form the Prescriptions by General Medical Practitioners in Wales's dataset.

■ Secure Anonymised Information Linkage Databank (SAIL) Primary Care GP dataset[3]. This dataset includes information about GP consultations relating to each individual patient and the total number of patients registered to a GP practice. The information used in the analysis of SAIL data comes from the following datasets:

  – sail0294v.practices (a dataset of the practices which were in the pilot sites and those that were not included in the pilot sites);

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[3] The SAIL databank anonymously record-links routinely collected data held in healthcare and social datasets at the Health Information Research Unit (HIRU), Swansea University.

– sail0294v.ar_pers_gp (a dataset of individuals registered to GP practices, and a history of registrations with GP practices); and

  – sail0294v.gp_event_ALF (a dataset of GP events with individual patient identifier).

1.3 Limitations of the final findings

The pharmacists and GP practices involved in the final evaluation were self-selecting. Furthermore, willingness to participate in the research could suggest greater engagement with the service amongst participating practices than in non-participating practices. Therefore, the qualitative findings set out in this report are not representative of all of the pharmacists and GP practices involved within the pathfinders. They do however, provide an in-depth insight into the experiences of the participating pharmacies and GP practices.

The findings relating to patient engagement with the service are informed by analysis of the eCAS data and interviews with pharmacists, GP practices, the LHBs and Community Pharmacy Wales (CPW). See section 1.3.1 for further information about direct patient engagement.

As noted in section 1.2.2, the final evaluation has used two different data sources to analysis the impact of the Choose Pharmacy programme. These were prescription data and GP consultation data from the SAIL database. Both of these datasets have strengths and weaknesses:

- The prescription data provides complete coverage of the number of prescription items issued in the pathfinder and comparator area sites. However, the data is presented as aggregate data per month, so it is not possible to find out the number of individuals receiving no, one or multiple prescription items each month. Therefore, assumptions have had to be made to assess the impact using this data source.

- The data from the SAIL database provides individual level data, so it is possible to assess the number of appointments per patient in a specified time period, as well as the number of patients who do not have a GP appointment in a period. However, the coverage of data from the SAIL database is variable and less comprehensive than prescription data. In particular, there is not enough data to be able to analyse the impact of Choose Pharmacy (using this data). For this reason, the prescription data has been used as the primary source to evaluate the impact, and costs and benefits of the pathfinders, despite the limitations of this data set.

The power of the study to assess impact was limited (i.e. the study's ability to detect a difference, if the difference in reality exists) due to a relatively small sample size – in part due to the fact that the service has only been in operation for 12 months and involved 31 pharmacists. The service also focuses on a limited number of ailments compared to the wider range of ailments for which patients seek advice and treatment from a GP. Therefore the impact of the Choose Pharmacy pathfinders is anticipated to be low, and a statistically significant result would not necessarily be expected.

1.3.1 Patient engagement

Patient engagement with the service is informed in several ways; analysis of the eCAS data, interviews with GP practices, pharmacists and the LHB and through patient reported evidence. In addition, numerous approaches were undertaken to capture patient reported evidence, however, the evidence captured was limited. These approaches included:

- Two short patient surveys made available in pharmacies in both pathfinder areas; pharmacists were asked to promote the survey. Only three patient surveys have been received at the time of reporting.
- Recruiting patients through existing patient forums in the pathfinder areas – the contact details of which were shared by the LHBs. This led to contact with a LHB service user experience lead who shared details of our online survey with a list of patient and volunteers who had expressed an interest in participating in research.
- Representatives from existing patient groups in both pathfinder areas also circulated letters to group members or newsletter articles inviting them to get in touch if they were willing to take part in the evaluation; two patients volunteered to participate, and were subsequently interviewed by telephone.

In total, 16 patient responses were obtained; two telephone interviews, three paper surveys and 11 online surveys were completed. Fourteen of the respondents had not used Choose Pharmacy and two respondents had used the service before. Due to the small sample size, and limited representativeness of the sample, evidence captured directly from patients has not been included within the evaluation.

1.4 Structure of report

The remainder of this report is structured as follows:

- **Section 2** examines pharmacy activity and engagement with Choose Pharmacy to date – including an assessment of the volume and type of consultations undertaken, the most common ailments presented and the outcomes of the consultations; variations in pharmacy engagement with the service and areas for development to support the day-to-day delivery of the service.
- **Section 3** examines GP practice engagement with Choose Pharmacy to date and referral pathways – including drivers and barriers to GP engagement and referral of patients to the service; and evolving referral pathways.
- **Section 4** examines patient engagement with Choose Pharmacy to date – including an assessment of the profile of patients using the service; trends in the ailments presented; and drivers and barriers to patient engagement.
- **Section 5** examines stakeholders' perceptions of the outcomes associated with the pathfinder service
- **Section 6** examines the impact of the pathfinder
- **Section 7** examines the costs and benefits of the pathfinder, together with potential costs and benefits of a national roll-out.
- **Section 8** presents the conclusions from the findings presented in the preceding sections and sets out recommendations for the continuous improvement of the Choose Pharmacy service.

Colour-coded quotes from pharmacists and GP practices are included within sections two to five. Quotes from pharmacists are colour-coded blue, and quotes from GP practices are colour-coded in grey

2   Pharmacy activity and engagement

This section examines pharmacy activity and pharmacists' experiences of delivering Choose Pharmacy over the evaluation period. It draws on analysis of the eCAS data and qualitative research with pharmacists. It includes an assessment of the volume and type of consultations undertaken, the most common ailments presented and the outcomes of the consultations, and variations in pharmacy engagement with the service over time. Pharmacists' views about the lessons learned and areas for development to support the day-to-day delivery of the service are also presented.

2.1   Demand for the service over time

Demand for the service has continued to rise – driven largely by seasonal increases in the number of consultations.

A total of 2,074 consultations were undertaken through the service between September 2013 and October 2014 – with a slightly higher proportion of consultations being undertaken in Betsi Cadwaladr (1,070, 52%), compared with Cwm Taf (1,002, 48%) (Figure 2.1). This is despite the phased roll-out of the service in Betsi Cadwaladr, which resulted in a lower number of consultations in this locality in the first couple of months of the service's operation.

Figure 2.1 Cumulative Choose Pharmacy consultations to October 2014, broken down by pathfinder site
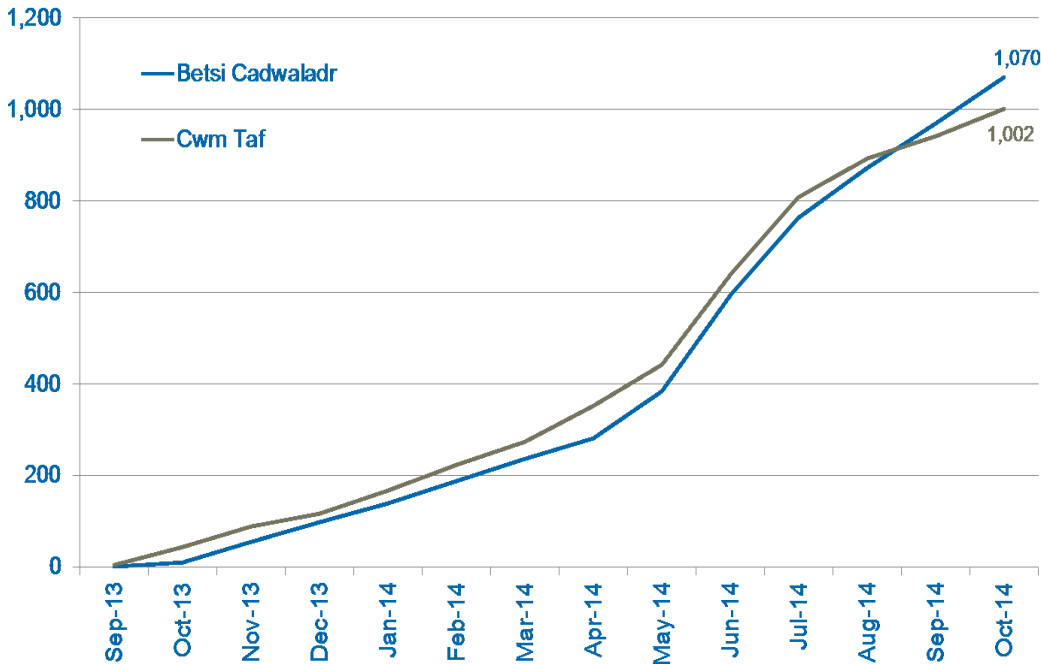
Source: eCAS data, November 2014

While the initial demand for the service was lower than expected, an upward trend in the number of consultations is evident, albeit varied in scale over time. Both pathfinders experienced a sharp increase in the number of consultations during April/May through to June (rising from 45 to 210 consultations in Betsi Cadwaladr and 79 to 196 consultations in Cwm Taf). This trend highlights seasonal demand for the service. Indeed, hay fever was the most commonly presented ailment

7

during May to June; it was also the most frequently presented ailment during the twelve months operation of the pathfinder (See Table 2.2). In addition to the seasonal changes in demand for pharmacy services, the sharp increase in the number of consultations during April/May corresponds with an increase in proactive promotion of the service. This promotion, particularly by GP practices and the Local Health Board (LHB), involved targeted newsletters and letters to patients (see section 3.2 for further information).

Figure 2.2 Choose Pharmacy consultations per month to October 2014, broken down by pathfinder site
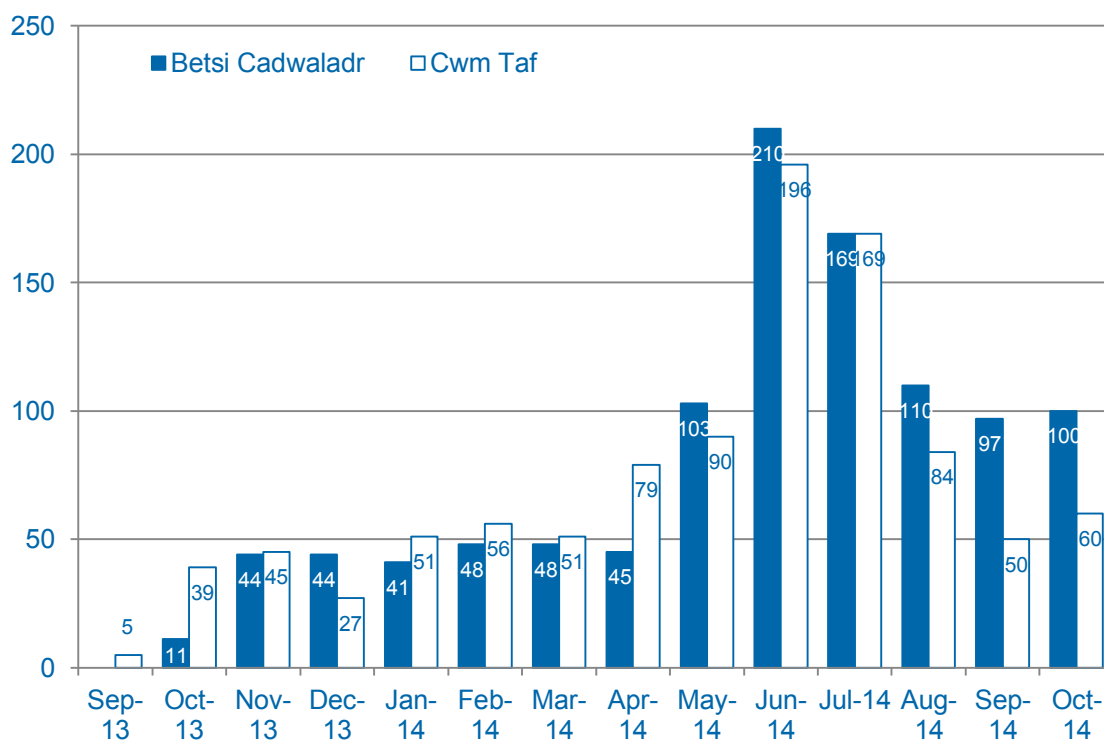
Source: eCAS data, November 2014

The number of consultations per month decreased after peaking in June and July. During August 2014, the number of consultations per month in Cwm Taf decreased to 84, followed by a further decrease of 20 – 30 consultations per month in September and October 2014 – returning to a similar level of demand that was observed during March 2014. The number of consultations during August, September and October also declined in Betsi Cadwaladr relative to the peak demand. However, the level of demand remained higher than that observed during the pre-summer months. The post summer decline in the number of consultations is consistent with seasonal changes in the demand for pharmacy services; hay-fever related consultations decreased by 76% (97 consultations) during August (See Table 2.2).

2.1.2   Average number of daily consultations

The average number of consultations per working day is shown in Figure 2.3. Up until March 2014 the average number of daily consultations was relatively low, ranging between 1 to 2.5 consultations per day in each pathfinder area. However, there was then a marked increase in the average number of consultations per day

during the summer months, peaking in both pathfinder sites in June 2014 (with 8.4 and 7.8 consultations in Betsi Cadwaladr and Cwm Taf, respectively). In the last two months (September and October 2014), the number of appointments in Cwm Taf has fallen back to similar levels as the pre-summer period, whereas in Betsi Cadwaladr the average number of appointments per day has remained at a higher level than the pre-summer months.

Figure 2.3 Average daily consultations per month to October 2014, broken down by pathfinder site
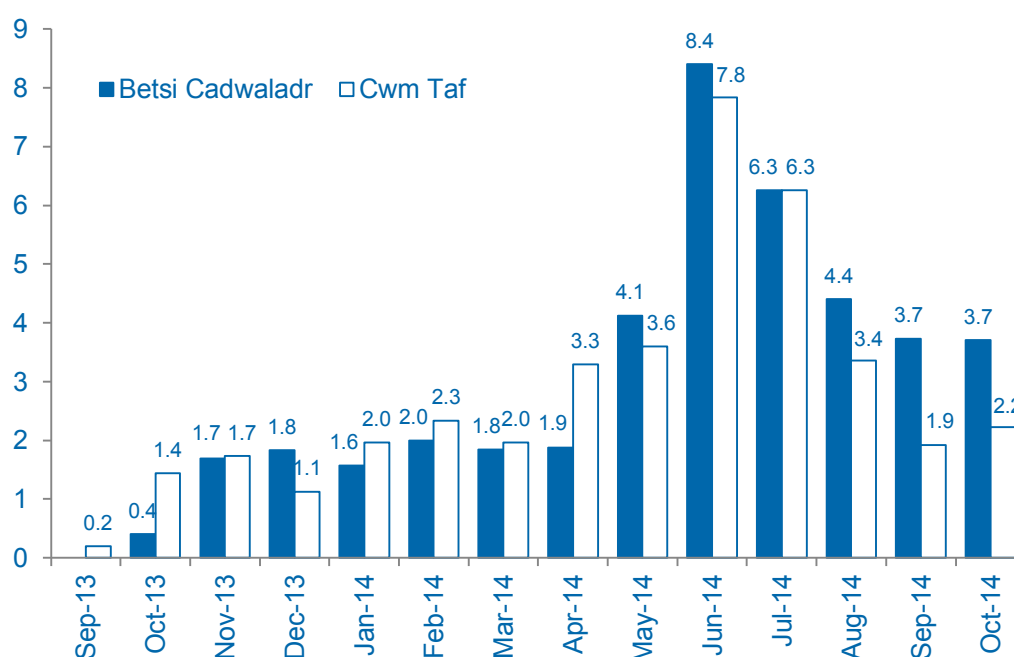
Source: eCAS data, November 2014

2.2   Pharmacy-level activity

Pharmacy activity varies across each pathfinder area – with a significant proportion of consultations being undertaken by a minority of pharmacies.

2.2.1   *Average number of consultations per pharmacy*

The median number of consultations per pharmacy for the service as a whole is 53. However, the distribution of consultations is uneven: 54% (1,222) of all consultations were undertaken by six pharmacies (two in Betsi Cadwaladr and four in Cwm Taf) (Figure 2.4 and Figure 2.5). These pharmacies have undertaken between 119 and 304 consultations between September 2013 and October 2014. Furthermore, two of these pharmacies (one in each pathfinder) have undertaken 26% (535) of all consultations. In contrast, twelve pharmacies have undertaken, on average, less than two consultations per month during the same period – eight (out of 19 pharmacies) in Betsi Cadwaladr and four (out of 13) pharmacies in Cwm Taf.

The variation in activity reflects the different levels of engagement by pharmacists, particularly with respect to the priority the pharmacy places on delivering Choose Pharmacy relative to dispensing and the delivery of other services (due to capacity

9

constraints) (see section 2.6.2), promotion of the service (see 2.6.10), as well as variation in GP engagement with the service (see section 3.1).

Figure 2.4   Number of consultations per pharmacy, Betsi Cadwaladr

Number of consultations to end of May 2014   Number of consultations to end of October 2014
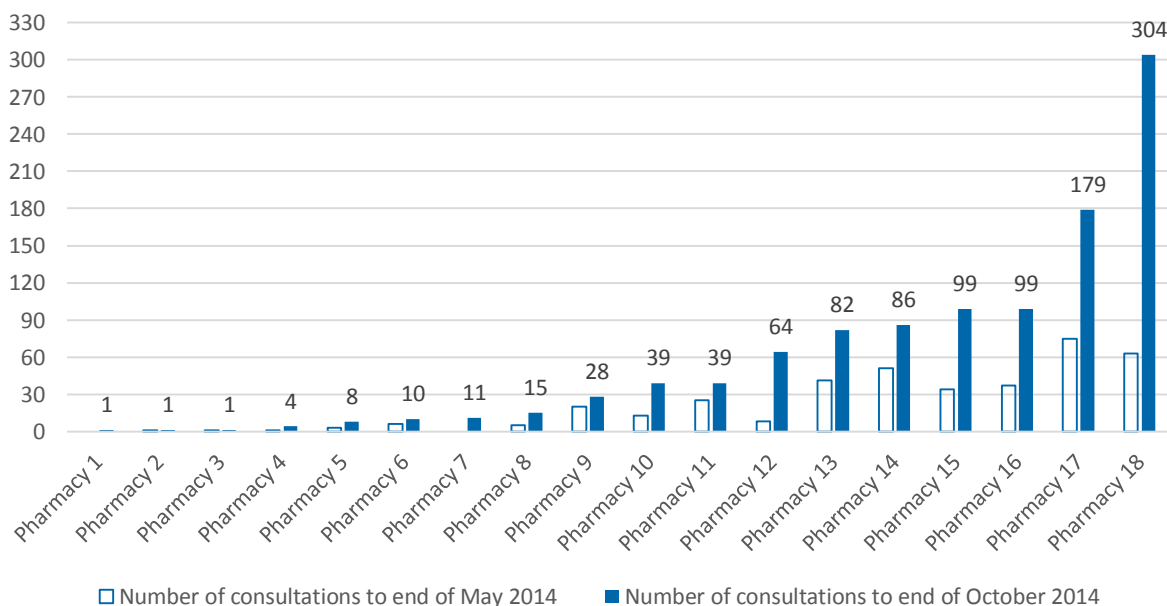
Source: eCAS data, November 2014

Figure 2.5   Number of consultations per pharmacy, Cwm Taf

Number of consultations to end of May 2014   Number of consultations to end of October 2014
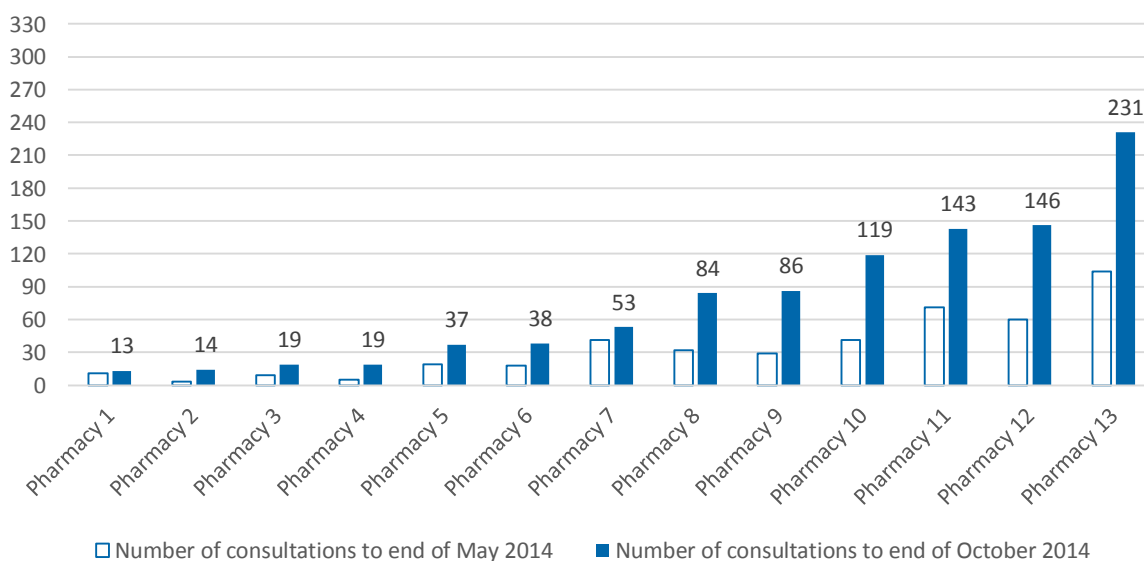
Source: eCAS data, November 2014

A shift from a low to a high level of activity (and vice versa) over time has been observed in few pharmacies (Figure 2.4 and Figure 2.5). This could suggest that levels of early engagement with the service (for example, within the first six months of operation) provides an indication of the level of future activity at an individual pharmacy. It could also suggest that it has not been possible to remove the initial barriers to engagement and increasing patient demand (specifically with respect to capacity and GP engagement). Consistent with these findings, an equal proportion of pharmacist survey respondents' considered that the demand

for the service had remained the same or decreased (six respondents, n=11), compared with those reporting that the service had increased (five respondents, n=11). Pharmacies that have seen a positive shift in activity reported that the number of consultations had increased as more patients became aware of the service and understood which conditions could be treated.

2.2.2 *Consultation duration*

The duration of consultations vary but a trend for shorter consultations has emerged as the service has embedded. A similar pattern with respect to consultation duration is observed in each pathfinder area (Table 2.1 and Figure 2.6).

While the median duration of a consultation was two minutes 20 seconds, some pharmacists interviewed reported that consultations often lasted between 10 – 15 minutes. This average consultation duration is taken from the time a pharmacist logs onto the eCAS system at the start of the consultation to when the pharmacist logs out of the system. It does not include additional time spent by the pharmacist dispensing treatment and /or other activities that do not require the pharmacist to be logged on to the eCAS system. The consultation length affected capacity and resulted in caution about promoting the service.

Table 2.1 Median duration of consultations to November 2014[4]

Duration of consultation		
	Range	**Median**
All	24s – 19 mins 26 secs	2 mins 20 secs
Betsi Cadwaladr	19s – 18 mins 24 secs	2 mins 16 secs
Cwm Taf	12s – 19 mins 26 secs	2 mins 47 secs

The median duration[5] of a consultation (as recorded as time logged onto eCAS) remained largely unchanged between October 2013 and March 2014, between four minutes 20 seconds to five minutes and 14 seconds (Figure 2.7). However, a trend for shorter consultations emerged during April and May (two minutes and eight seconds and two minutes and 13 seconds, respectively) and in July, August and October fell below two minutes (Figure 2.7). This suggests that consultation duration has decreased as demand has increased. Furthermore, the median consultation duration remains relatively constant during and after the summer peak in demand –suggesting that consultation duration has also decreased as pharmacists have gained more experience in delivering the service. Indeed those pharmacists that had experienced higher activity noted that the time taken to undertake consultations had improved as they became more familiar with delivering the service.

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[4] This average consultation duration is taken from the time a pharmacist logs onto the eCAS system at the start of the consultation to when the pharmacist logs out of the system. It does not include additional time spent by the pharmacist dispensing treatment and /or other activities that do not require the pharmacist to be logged on to the eCAS system.

[5] The median consultation time is based on the eCAS data and captures the time the pharmacist is 'logged on' to eCAS only.

Figure 2.6 Duration (in minutes) of consultations to November 2014
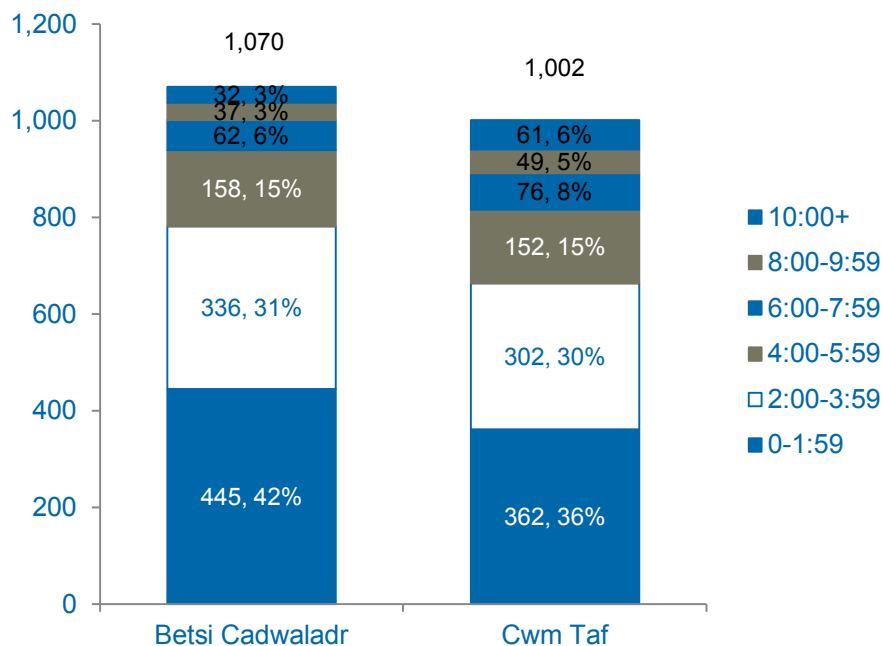
Source: eCAS data, November 2014

Figure 2.7   Variation in consultation duration over time
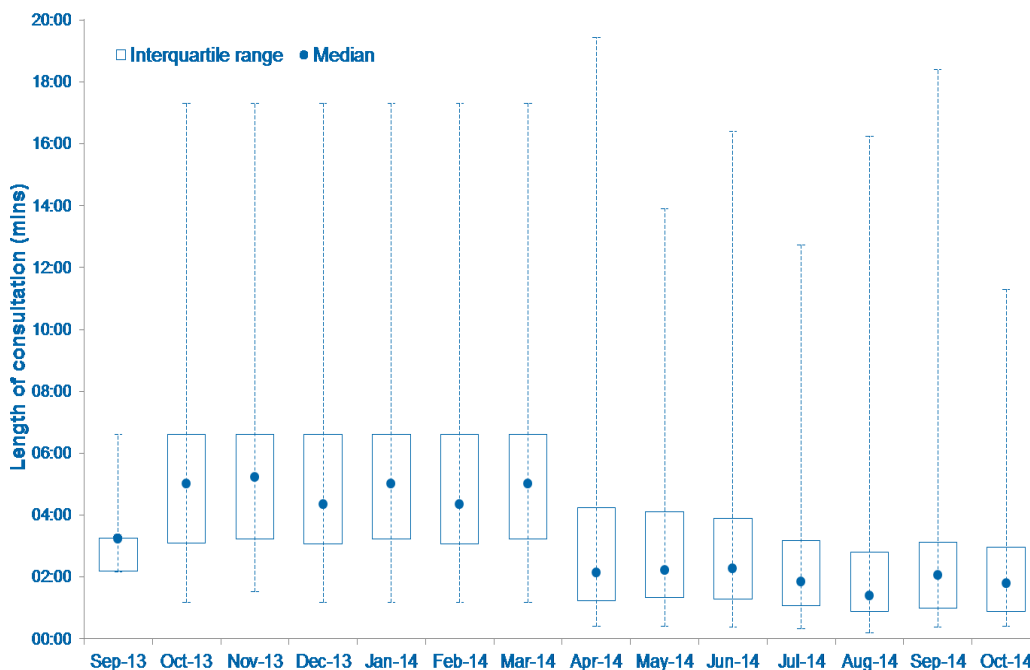
Source: eCAS data, November 2014

"It is quite comfortable now, I have the password etc. in my head so I can just get in there and do it – the process has become quicker, I am used to the system and how things work now compared to when the scheme launched"

"We are lucky to have two pharmacists and can spend longer on consultations – generally a consultation takes longer than 10 minutes and can be difficult at times"

"Practice has ensured the flow of the consultation is speeded up, having all materials to hand to speed the process up for the patient both in consultation and those waiting for their prescriptions"

2.3 The types of ailments most frequently presented to the pharmacist

The top five ailments most frequently presented to the pharmacist account for the majority of consultations.

Consultations have been undertaken for 25 of the 26 common ailments in scope for the service (Figure 2.8) – with the top five most common ailments accounting for 68% (1,405) of consultations. The most common condition presented across both pathfinders was hay fever, accounting for 24% (507) of all consultations. Conjunctivitis and head lice are the second and third most common conditions, respectively. Combined, the latter two conditions account for 29% (593) of all consultations.

The most common ailments presented by patients have varied slightly over time – largely due to seasonal effects. As would be expected, patients presenting the symptoms of hay fever became much more common between April and August 2014. Peaks in consultations for head lice correspond with the start of the new school year in September and October. In contrast, conjunctivitis was presented frequently each month (except for October 2013). Other common ailments were presented in the majority of months, with no pattern being evident over time (Table 2.2).

Figure 2.8 Volume of consultations by type of ailment, broken down by pathfinder site

Most common ailments

Ailment	Value
Hay Fever	507
Conjunctivitis	322
Head Lice	271
Vaginal Thrush	180
Dermatitis	126
Threadworms	111
Oral Thrush	98
Sore Throat & Tonsillitis	69
Verruca	65
Constipation	46
Indigestion & Reflux	40

■ Betsi Cadwaladr
□ Cwm Taf

Least common ailments

Ailment	Value
Athlete's Foot	35
Haemorrhoids	29
Dry Eyes	27
Intertrigo/Ringworm	25
Nappy Rash	25
Chicken Pox	24
Scabies	21
Teething	21
Backache	13
Cold Sores	6
Diarrhoea	4
Mouth Ulcers	4
Ingrowing Toenail	2
Acne	1

■ Betsi Cadwaladr
□ Cwm Taf

Source: eCAS data, November 2014

The two pathfinder areas vary in the most common ailments presented to the pharmacist. Hay fever, conjunctivitis, head lice and oral thrush are frequently presented across both areas. Dermatitis was more common in Betsi Cadwaladr, whereas vaginal thrush was more common in Cwm Taf.

Pharmacists also highlighted the seasonal trend in demand for both the service and the types of conditions treated.

"Head lice treatment has decreased recently but spiked in the weeks after children returned to school from summer – in September/October time"

"We've seen an increase in number of patients presenting with conjunctivitis – otherwise no patterns observed"

"The majority of patients were seen for thrush and conjunctivitis"

"Hay fever referrals (both from GP surgeries and self-referrals) were very popular during the summer months - no other trends have been noticed"

"It [the delivery of the service] has been very seasonal and the number of conditions we have been treating are limited, I have only treated the conditions of head lice, and hay fever regularly. These have been very limited to times of year - hay fever in summer and head lice treatments when children have returned to school after summer holidays"

Table 2.2 Top three most common ailments presented each month

Month	Most common ailment		
	1	2	3
Sep-13	**Threadworms** 2, *40%*	**Backache** 1, *20%*	**Conjunctivitis; Vaginal Thrush** 1, *20%;* 1, *20%*
Oct-13	**Head Lice** 9, *18%*	**Sore Throat** 7, *14%*	**Vaginal Thrush** 7, *14%*
Nov-13	**Conjunctivitis** 22, *25%*	**Dermatitis** 11, *12%*	**Vaginal Thrush** 11, *12%*
Dec-13	**Conjunctivitis** 25, *35%*	**Dermatitis** 11, *15%*	**Threadworms** 8, *11%*
Jan-14	**Conjunctivitis** 16, *17%*	**Threadworms** 13, *14%*	**Vaginal Thrush** 11, *12%*
Feb-14	**Conjunctivitis** 27, *26%*	**Head Lice** 18, *17%*	**Vaginal Thrush** 11, *11%*
Mar-14	**Conjunctivitis** 20, *20%*	**Vaginal Thrush** 13, *13%*	**Head Lice** 10, *10%*
Apr-14	**Conjunctivitis** 19, *15%*	**Hay Fever** 19, *15%*	**Head Lice** 16, *13%*
May-14	**Hay Fever** 56, *29%*	**Conjunctivitis** 38, *20%*	**Vaginal Thrush** 16, *8%*
Jun-14	**Hay Fever** 239, *59%*	**Conjunctivitis** 47, *14%*	**Head Lice** 23, *6%*
Jul-14	**Hay Fever** 130, *38%*	**Conjunctivitis** 38, *20%*	**Head Lice** 36, *11%*
Aug-14	**Head Lice** 47, *24%*	**Hay Fever** 33, *17%*	**Conjunctivitis** 38, *13%*
Sep-14	**Head Lice** 39, *27%*	**Hay Fever** 15, *10%*	**Conjunctivitis; Threadworms** 14, *10%;* 14, *10%*
Oct-14	**Head Lice** 49, *31%*	**Conjunctivitis** 23, *14%*	**Vaginal Thrush** 14, *9%*

2.4 Outcomes of consultations

The majority of consultations resulted in treatment with a product. Two thousand nine hundred items of medication have been issued through the Choose Pharmacy service. These were issued in 2,003 (97%) consultations. Sixty nine consultations resulted in no treatment, 16 of which were for the four conditions for which the service offers 'advice only'[6]. Beyond these four conditions, there is no pattern to which ailments were more or less likely to result in no treatment – with the consultations which resulted in no treatment being for the same ailments as those which did receive treatment (for example, conjunctivitis and vaginal thrush).

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[6] Cold sore; diarrhoea; in-growing toenail; and mouth ulcer.

2.4.1 Prescribed treatments[7]

The most commonly prescribed treatments are given for the most common ailments – specifically, conjunctivitis, hay fever, head lice, vaginal thrush (Figure 2.9). However, despite hay fever being the most commonly presented ailment, Chloramphenicol eye drops, (a treatment for conjunctivitis) and Dimeticone, (a treatment for head lice) were the two most frequently prescribed items. However, this may be due to five treatment options being available for hay fever compared to two treatment options for head lice and conjunctivitis. In total, 875 treatments were prescribed for hay fever.

Figure 2.9 Most common treatments prescribed, broken down by pathfinder site
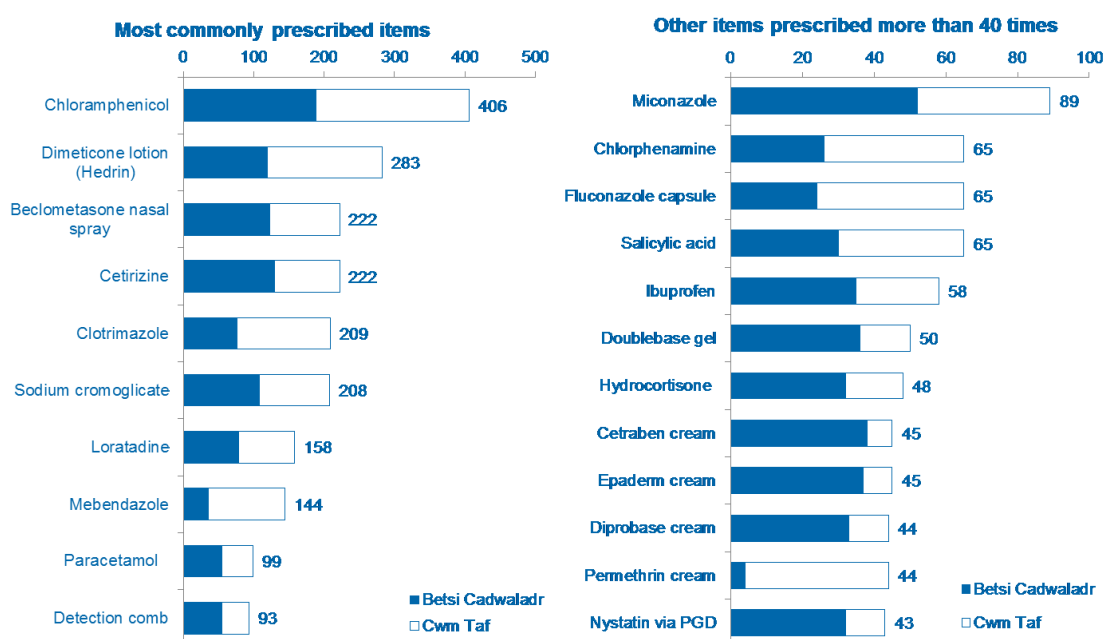
Source: eCAS data, 2014

2.5   Referrals from the service to other health care professionals

Few patients have been referred to other healthcare practitioners following a consultation – suggesting that the majority of ailments presented can be dealt with through the service. The eCAS system allows pharmacists to select one of four options for the action taken (in addition to whether treatment was prescribed). These options include: the provision of advice; referral to a GP; referral to an optician; or 'other' action. Pharmacists reported providing additional action in 530 consultations (26% of all consultations). The majority of the additional action has been to provide advice to the patient (Figure 2.10). Given that this is a core element of the service some pharmacists will not have identified 'advice' as further action. If advice is excluded, only 76 consultations resulted in additional action (4% of all consultations) – 38 of which involved referral to a GP and 28 resulting in 'other action'. In addition, 8 patients have been referred to an optician – reflecting the establishment of a new referral pathway to the optician in the last six months of

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[7] See Annex 5 for a summary of the treatments prescribed for each of the common ailments in scope of the Choose Pharmacy service.

operation of the pathfinders. Only one patient has been referred to hospital as an emergency since the inception of the pathfinder service.

Pharmacists also noted that they had referred few patients back to the GP for reasons other than inappropriate initial referrals (see section 3.3.1).

> *"If we have a patient with a serious condition that we feel needs support from a GP, we have an agreement that we can send them to the GP- this is probably less than 1 in 20. I am able to deal with 95% of referrals that I get from GP surgeries"*

Figure 2.10 Additional action provided by the pharmacist, broken down by pathfinder site
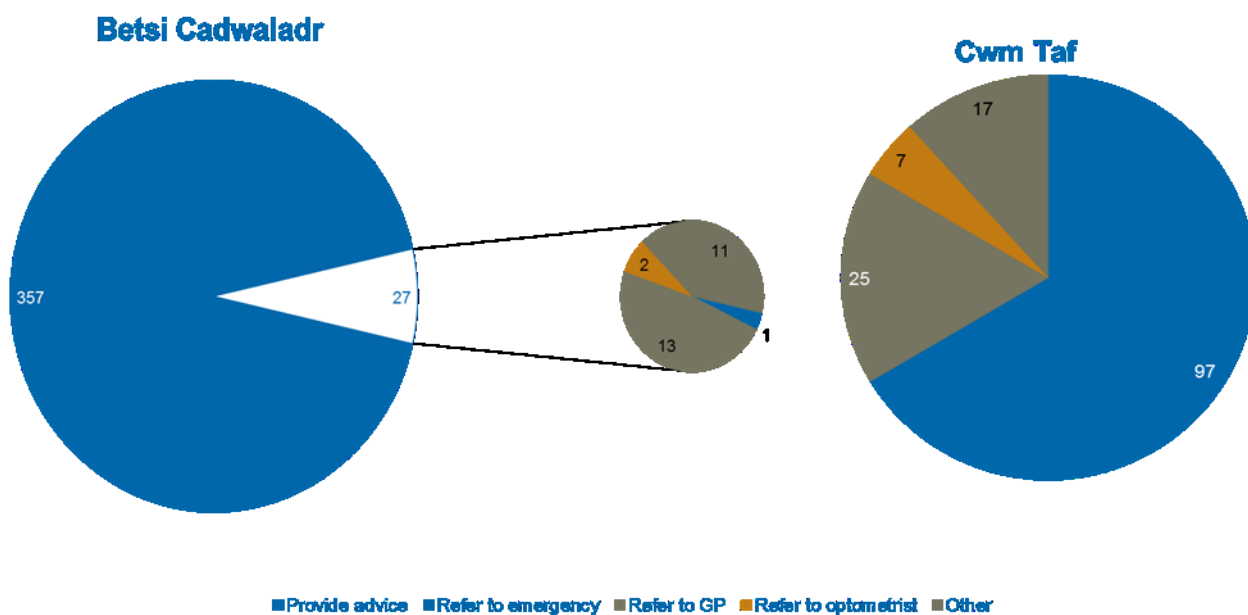
Source: eCAS data, November 2014

2.6   Pharmacists experiences of delivering the service

Pharmacists' experiences of delivering the service have varied, most often due to different levels of engagement and activity. However, the majority reported that the experience has been positive, particularly because of the improved job satisfaction delivering the service brings (see section 5.1) and positive patient feedback (see section 4.5). Nonetheless, several pharmacists felt that they had delivered too few consultations to comment on their experience in a meaningful way.

> *"Overall my experience has been positive, the patients seem to like it a lot'*

> *"Hardly used, the surgery sent two patients which were not eligible. Happy to deliver service but it needs refining"*

> "I haven't delivered a lot so I can't really say whether it's been a good or bad experience"

> "It's been difficult to get the scheme started because it's something totally new"

> "It has definitely been positive"

> "We're still finding our feet"

2.6.1 Pharmacy engagement with promotion of the service

Proactive promotion of the service continues to vary, particularly with respect to engaging GPs and patients – with a significant proportion of pharmacists considering that they have a limited role in raising awareness.

Pharmacy engagement with the service (with respect to promotion) remains similar to that observed at the interim evaluation. The majority of pharmacists have continued to promote the service by displaying posters and leaflets. Pharmacists that were previously engaging with GP practices and promoting the service to patients have also continued to build relationships and raise awareness. Others have attempted to promote the service with GP practices but had found them to be unreceptive (see section 3.1).

A minority of pharmacists interviewed had continued to limit promotion of the service – the primary rationale being the limited capacity of the pharmacy (and the associated opportunity cost of undertaking consultations compared with responding to other customers) (see section 2.6.2).

Pharmacists consulted continued to be divided with respect to the role they should play in raising awareness – both with the public, patients, GP practices and other health care professionals. Many pharmacists, but not all, considered that it was more appropriate for GP practices to create the demand for the service (principally because the service aims to reduce demand on GP time). The pharmacists that considered they did have a role in engaging GP practices, have worked closely with GP practices to resolve issues associated with inappropriate referrals and capacity issues (see section 3.3.2).

> "I'm dependent on what the surgery send me'

> "The Health Authority need to promote this and drive it forward"

> "I continue to supply surgery with cards and posters to remind them about the service"

Stakeholders considered that the pharmacist-led awareness-raising with an ongoing promotion of the service to GPs had helped to embed the service. It had also enhanced the support and broader awareness-raising activity undertaken by the LHBs. Indeed, those pharmacies with a relatively high number of consultations typically reported working closely with GP practices or other health care professionals to improve the delivery of the service by a GP practice. This suggests that more proactive approaches to raising awareness and creating demand are required.

2.6.2 Pharmacy capacity to deliver the service

Capacity to deliver the service remains a key factor driving levels of pharmacy engagement with the service.

Pharmacists continued to express mixed views about their capacity to deliver the service. Pharmacists with a relatively low number of consultations typically reported having limited capacity to undertake consultations – because it would 'take them away from the dispensing bench'. In this respect, a small majority of pharmacists considered that delivery of the service required two pharmacists to be on site.

> "There's been no real impact on capacity - we were quite slow starting off – it's unlikely that pharmacists are doing everything they could for the scheme given how busy they are."

> "As it stands, we are just squeezing it alongside the other one million and one things that we have to do daily"

> "It's quite easy to get it into part of the daily workflow so it hasn't interfered too much"

> "It's challenging in a one pharmacist branch such as this"

Other pharmacists (including those with high activity) considered that they did have the capacity to deliver the service. Furthermore, they reported that the current volume of consultations was manageable and did not express concerns about capacity should demand increase. The availability of two pharmacists on site was not the sole factor driving capacity to deliver the service. Several pharmacists noted that their workforce model had enabled them to 'move away from the dispensing bench'. Specifically, pharmacy technicians had been taking on more traditional pharmacist responsibilities, freeing the pharmacist to deliver a greater level of patient services.

"With the change in services I am seeing myself move away from the dispensing bench - we are having to change our team to accommodate for that. We now have two full time technicians and two counter dispensing assistants. We make sure we have a minimum of two on the bench and that doesn't include the pharmacist"

"We need to look at the pharmacy team we have around us and make sure that we have capacity and that the pharmacist can remove ourselves from the dispensing bench and it still carries on"

"We are not relying on the pharmacist being a technician anymore. I think if the common ailment scheme is going to work in your pharmacy then you need to up your whole team"

The majority of pharmacists noted that capacity issues affect patient access and satisfaction – and the reputation of the service. Indeed, several GP practices reported that some patients continued to be reluctant to use Choose Pharmacy, because on previous visits, the pharmacist has been too busy dispensing to offer a consultation. Pharmacists also reported that these situations had also resulted in GP practices being less inclined to refer patients. Some pharmacists and GP practices were working together to help manage this, for example, by highlighting the availability of the pharmacist when referring patients, and identifying peak times when the GP practice is likely to refer patients (for example, during open access surgery times).

"Patients cannot get to see a pharmacist when needed so they return to surgery to wait to see the GP. The service is much too limited to be of any significant help or impact on workload for our surgery because it is open access"

"Sometimes if patients have to wait then they come back in to the surgery"

The majority of all stakeholders consulted emphasised the importance of the consistent availability of the service to sustaining and increasing patient and GP engagement with the service.

> "Some pharmacists advertise the service and they are unable to offer it because there is no regular pharmacist available"

> "For the service to work, it is important that pharmacies are staffed with pharmacists who are accredited and can actually deliver the service – or it puts patients off"

> "I think we, as pharmacists, have to make sure that we can deliver the service. We have to have capacity and this is vital. It will look silly if patients are referred and we turn around and say we can't do it"

> "Any pharmacist wanting to deliver has to be able to deliver this. They can't run a three day week service. It will destroy our credibility if they can't deliver the service"

Consistent with the interim findings, pharmacists and GP practices identified that the capacity to offer a continuous service was particularly challenging for pharmacies that relied on locum pharmacists. Stakeholders noted that not all locum pharmacists placed within a 'Choose Pharmacy' pharmacy are accredited to deliver the service. In these circumstances, despite a pharmacist being 'on site', patients are unable to access a consultation. Again, such experiences impacted on subsequent patient and GP practice engagement.

> "The Local GP surgery was very keen to use the service, but I only work part-time. The majority of pharmacists sent here on other days have been unable to offer CAS. As a result, the doctors' enthusiasm soon turned to frustration - patients that they had suggested try CAS ended up going back to take appointments late in the day. Although we now have regular, accredited pharmacists almost every day, there is little effort [by the GP practice] to triage patients at first contact, so very few are referred to us"

Several pharmacists considered that training for locum pharmacists was critical to ensuring the provision of a continuous service. The LHBs noted that the e-
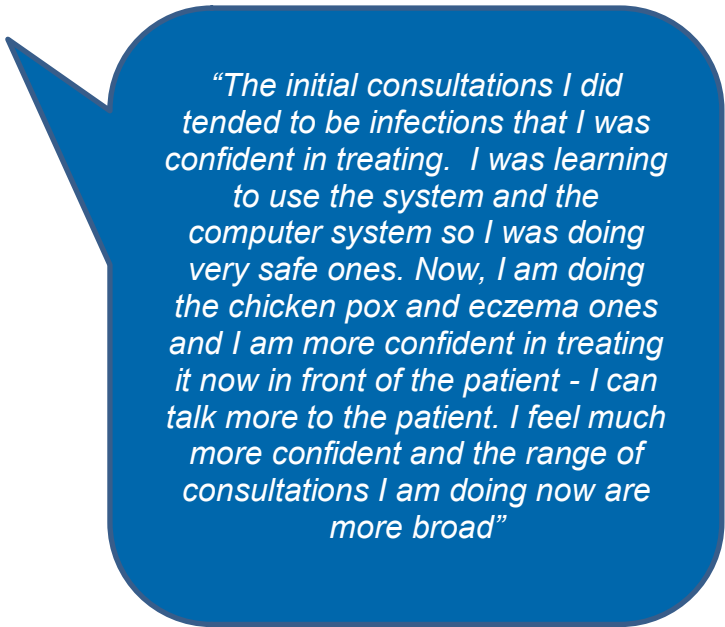
Learning package being developed with Wales Centre for Pharmacy Professional Education (WCPPE) and the LHBs will provide an accessible route to increasing the number of locums accredited to deliver the service.

2.6.3   Capability and confidence in delivering the service
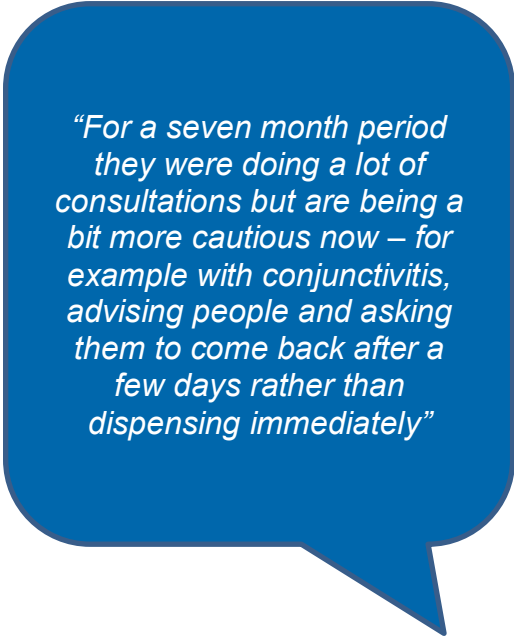
Confidence in delivering the service and managing patient expectations is growing, but is dependent on the level of experience in undertaking consultations.

As noted in section 2.2.2 several pharmacists reported that delivery has improved as they have gained more experience in undertaking consultations – particularly with respect to familiarity with the formulary and the use of the IT system. Pharmacists that had undertaken a limited number of consultations were more likely to report that they were still *'getting up to speed'* with respect to understanding protocols, Patient Group Directives and the IT system. Specifically, several noted that they had not had the opportunity to consolidate their learning given the time lag since undertaking the training, or the low frequency of consultations.

Several pharmacists noted that they had become more confident in treating the ailments that were 'less straightforward' than conditions such as head lice. They also reported greater confidence in exercising professional judgement when several treatment options are available under the formulary, rather than following the criteria 'to the letter' – for example, in the treatment of hay fever. Several pharmacists also reported that, where appropriate and after consultation, they had started to advise patients to return in several days if the condition had not improved, rather than issue treatment.

> *"The initial consultations I did tended to be infections that I was confident in treating. I was learning to use the system and the computer system so I was doing very safe ones. Now, I am doing the chicken pox and eczema ones and I am more confident in treating it now in front of the patient - I can talk more to the patient. I feel much more confident and the range of consultations I am doing now are more broad"*

> *"For a seven month period they were doing a lot of consultations but are being a bit more cautious now – for example with conjunctivitis, advising people and asking them to come back after a few days rather than dispensing immediately"*

The majority of pharmacists highlighted the importance of managing patient expectations (see section 4.5.2) – including managing expectations to be seen immediately. Some pharmacists were comfortable with asking patients to 'wait', return later or to purchase over the counter treatments (OTCs). Others highlighted that they felt the need to undertake the consultation once requested from the patient to preserve the reputation of the service.

Finally, a minority of pharmacists considered that they would benefit from taking a course in the diagnosis of common ailments. Others highlighted the importance of training all pharmacy staff so that patients' experiences are positive from the moment they enter the pharmacy.

"I feel pressured to see the patient there and then, rather than turn people away or ask them to call back later as they just go back to the surgery and say I have refused to see them"

"If a pharmacist isn't available we often treat over the counter or we advise patients to come back. We wouldn't refer the patient back to the GP if the pharmacist wasn't available"

"I end up squeezing patients in rather than referring them back to the surgery when really the workload in the dispensary should dictate that I do just that, but possible erosion of relationships with surgeries adds extra pressure to deliver"

2.7 Pharmacists' views about how the service could be developed further

Pharmacists identified several areas for development to support the day-to-day delivery of the service, mostly focussed on how to improve the formulary and eCAS system.

2.7.1 Improvements in the formulary

The majority of pharmacists considered that advice-only ailments[8] should be removed from the formulary or consideration should be given to whether effective treatments can be included – the rationale being that patients are sometimes dissatisfied with the service when they don't receive treatment and revert back to the GP. However, others noted that patient dissatisfaction in these circumstances could be mitigated by managing their expectations regarding treatment from the outset and prior to starting the consultation (see section 2.8).

"The advice only indications are not well received by the public"

"People don't like being given nothing, if you go into a pharmacy you expect to get something, they could buy it but as they've been taken into the system they don't expect that"

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[8] Cold sore; diarrhoea; in-growing toenail; and r

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> "Either remove or include a treatment option for those conditions which currently have no treatment option under the common ailments service, for example, loperamide for management of diarrhoea"

Several pharmacists considered the formulary to be restrictive, with the view that

- More effective treatments should be available for some conditions, for example, for athlete's foot and chicken pox;
- The formulary should include more treatment options for some conditions. In this respect several pharmacists noted that the service had worked particularly well for ailments for which a number of treatment options are available; and
- Restrictions in number of treatable episodes of certain conditions should be revised upwards.

> "Not quite enough choice sometimes"

Others considered that the ailments in scope should be extended to include other conditions, for example cystitis, warts and fungal toe infections. Only one pharmacist considered that the number of ailments in scope should be reduced to focus on those that have created a high demand for the service and/or have worked well.

> "Have we got too many ailments, maybe we should concentrate on certain ones?"

> "We could crank it up a bit, we could deal with a lot more common ailments but it's a good start"

> "We can offer more thin

> "I'm not saying pharmacists aren't really busy as I know they are, but if anything else could come out and go on to that list it would be a great help"

> "The service could be expanded – potentially other ailments which pharmacists could treat – this would continue to make a difference to primary care as primary care is saturated'
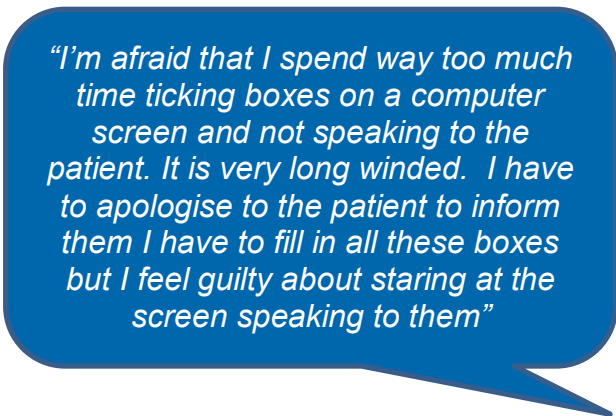
A minority of pharmacists suggested that the formulary should be restricted to treatments that are not available OTC, with some suggesting that this restricted list should include antibiotics. It was considered that such an approach would encourage people to use the service, as well as prevent a potential conversion of OTC customers[9]. In contrast, others considered that the inclusion of antibiotics could have a negative effect on managing antibiotic resistance – even though it could potentially reduce the demand for GP consultations. Others suggested that inclusion of the following treatments would be beneficial: Omeprazol, Lansoprazole and Ranitidine for the treatment of indigestion and Scheriproct for the treatment of haemorrhoids.

The Welsh Government is already taking steps to improve the formulary. In late 2014 it undertook a review of the formulary in consultation with the participating pharmacies. Recommendations are now being considered by the All Wales Prescribing Advisory Group and the All Wales Medicines Strategy Group.
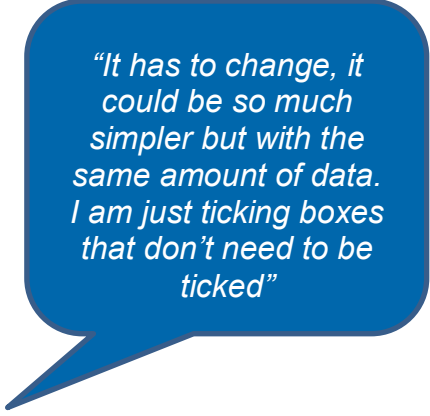
2.7.2 Improvements to the eCAS information system

Pharmacists consistently reported that refinements to the eCAS system are needed to improve the day-to-day delivery of the service.

Many expressed frustration that despite providing feedback previously on how the system could be made more user-friendly, no amendments had been made. Pharmacists continued to highlight that a disproportionate amount of consultation time was still spent logging data on eCAS. Many highlighted that even with greater experience of the system, the log-on process still remained overly complex and time consuming. Several considered that unnecessary questions were asked repeatedly.

"I'm afraid that I spend way too much time ticking boxes on a computer screen and not speaking to the patient. It is very long winded. I have to apologise to the patient to inform them I have to fill in all these boxes but I feel guilty about staring at the screen speaking to them"

"It has to change, it could be so much simpler but with the same amount of data. I am just ticking boxes that don't need to be ticked"

2.7.3 Improving remuneration

Only one pharmacist commented on remuneration for delivering Choose Pharmacy to address capacity issues. It was considered that greater remuneration would incentivise employers to provide second pharmacist cover.

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[9] Only two pharmacists reported a decline in OTC sales – with one noting that this was for head lice only (see section 4.4)

2.8   Lessons learned

Common themes in the lessons learned from delivering the pathfinder service were reported by pharmacists. These were managing patient expectations, reducing inappropriate referrals, and how to prepare for peaks in demand.

2.8.1   *Managing patient expectations*

The majority of pharmacists highlighted the need to manage patients' expectations about the scope of the Choose Pharmacy service in order to reduce the risk to patient dissatisfaction with the service (see section 4.5.2). It was noted that GP practices, LHBs and other stakeholders had a role to play in improving patients' understanding of the service. However, many pharmacists acknowledged that they should also help patients to understand the service. In this respect, several pharmacists reported that managing patient expectations prior to entering the consultation room had proved to be effective. This included highlighting advice only treatments, age restrictions and the number of treatable episodes, as well as the scope of the service with respect to antibiotics, prior to entering the consultation room.

Pharmacists also noted that a key lesson learned was to check, prior to the start of the consultation:

- The common ailment for which advice and treatment was being sought;
- The patient was not eligible to access the service due to age restrictions associated with the advice and treatment for a given condition; and
- The patient has not exceeded the number of episodes of a given ailment that can be treated within a year.

2.8.2   *Managing inappropriate referrals through effective and proactive communication between GP, pharmacist and the patient*

Several pharmacists highlighted the importance of feeding back (to the GP practice) inappropriate referrals promptly. In particular, they noted the importance of providing the full reasoning as to why the referral was unsuitable, and advising on the urgency of the appointment. The same information was also shared with the patient, particularly whether an urgent GP appointment was required.

Engaging the practice team and providing them with the materials required to make correct referrals was also identified by several pharmacists as a key lesson learned.

2.8.3   *Preparing for peaks in demand and ensuring product stock levels*

A minority of pharmacists identified the need to ensure stock levels of products specific to the Choose Pharmacy formulary had been a key lesson learned, including for example, ensuring the 'correct' product pack sizes are in stock. However, one pharmacist noted a potential tension between ensuring appropriate stock levels and the company's position on stockholding.

3　GP engagement and referral pathways

This section examines GP practice engagement with Choose Pharmacy and referral pathways. It identifies drivers and barriers to GP engagement and referral of patients to the service. Other referral pathways are also discussed.

3.1　GP experience of delivering the service

Consistent with the interim findings, all stakeholders considered GP practice engagement to be critical to generating demand for the Choose Pharmacy service – not only as the major source of referral of patients to the service, but also to promote patient confidence in the service. Despite this, LHBs and pharmacists continued to note that the levels of engagement with the service varies greatly across GP practices. They highlighted that referral volumes (section 3.3) and perceived willingness to forge links with the pharmacies differed across GP practices within both pathfinder areas. Nonetheless, some did consider that GP practices had become more supportive of the service.

"There is considerable variation between GPs, some are very supportive and make repeated referrals, others make fewer referrals but all are supportive of the service"

"The staff seem to like it as it gives them something else to offer patients wanting appointments"

"The pharmacy do have a good relationship with the GP and the surgery seem keen for the pharmacists to get involved"

"Some surgeries are engaged and refer suitable patients which allows a good treatment plan and outcome for the patient – others are not"

The majority of GP practices consulted were supportive of Choose Pharmacy and highlighted significant levels of engagement with the service, particularly with respect to its promotion. Despite this, views about their practices' level of awareness of the service varied, suggesting that improved awareness was still required. Most notably the practices that had trained staff, referred patients and promoted the service proactively (see section 3.2).

"We're very involved - the pharmacist came in to discuss the service early on"

"The doctors are aware – I am not sure the others are - we became aware of the service through a meeting with the local pharmacist"

"We've been involved for some time – the pharmacy adjoining the practice has been delivering the service since it started. Unfortunately the pharmacist at that time has left and we are now meeting with the LHB and the present new Pharmacist to see how we can improve the service"

"I am well aware of the service and have tried to promote it through the admin staff and doctors"

"All of our staff are fully aware of the service – the receptionists, the nurses, the GPs and the practice manager, we are promoting the service and referring patients"

"Our awareness is fairly good - most of the staff are aware"

Stakeholders noted that practices involved in the design of the service prior to its implementation were particularly engaged. In addition practices that had existing relationships with their local pharmacists, or that had stretched capacity to respond to the growing demand for GP consultations, (especially in localities in which there was only one GP practice), were often more likely to be engaged and referring patients.

Perceived barriers[10] to GP practice engagement were: low levels of awareness and understanding of the service, together with concerns about 'loss of business' specifically in the case of dispensing practices.

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[10] Pharmacists perceived these to be the barriers to GP engagement. No barriers were identified by the GP practices that participated in the evaluation – reflecting high levels of engagement with service within the sample involved.

3.2 Promotion of the service by GP practices

The sample of GP practices that participated in the evaluation have undertaken similar actions to those reported in the interim findings. These actions include:

- Displaying 'Choose Pharmacy' posters and leaflets;
- Receptionists sign-posting patients to the service when they attend or telephone the practice to book an appointment;
- GPs having 'Choose Pharmacy' cards on their desks for patients to take away from the consultation, and advising patients that they could have seen the pharmacist;
- Including 'Choose Pharmacy' cards with every letter that is sent to patients (for example, letters for flu jabs); and
- Including information about Choose Pharmacy in practice newsletters.

3.3 Referral of patients from GP practices

Despite the variable levels of engagement, the majority of patients using the service had been referred from the GP practices. The majority of stakeholders consulted reported that patients were most likely to hear about the service from their GP practice (section 4.5.1). Few pharmacists reported changes in the levels of GP referrals since the interim evaluation – with only two reporting a reduction in referrals.

"I have not seen an increase of referrals from surgeries over the months"

"Over the last year we have seen a fall in the number of GP referrals, however the referrals we have been receiving are now more appropriate"

"GP referrals account for a fair amount of people we see coming through; one surgery in particular gave a lot of referrals in one week, I think they had a briefing. But it died down again soon after – I think they forgot about it'

Pharmacies based in medical centres or in localities with multiple dispensing GP practices typically reported low levels of referrals. In addition many pharmacists believed that some GP practices were only referring patients when 'open' appointments were booked up, which in some cases led to inappropriate referrals (see section 3.3.1).

The drivers and barriers to GP practice referrals mirrors those observed for GP practice engagement. Additionally, and as was observed in the interim evaluation, the existing operation of a patient triage system together with practice managers'

and receptionists' understanding of the service were identified by pharmacists as important factors driving referral to Choose Pharmacy.

"The surgery refers patients when there are no appointments. We would prefer patients triaged and referred at an earlier stage"

"We get more referrals when the surgery is busy - first thing on a Monday morning when appointments difficult to access"

'It's been a case of if you can't get an appointment just go to the pharmacy – regardless of what their ailment is"
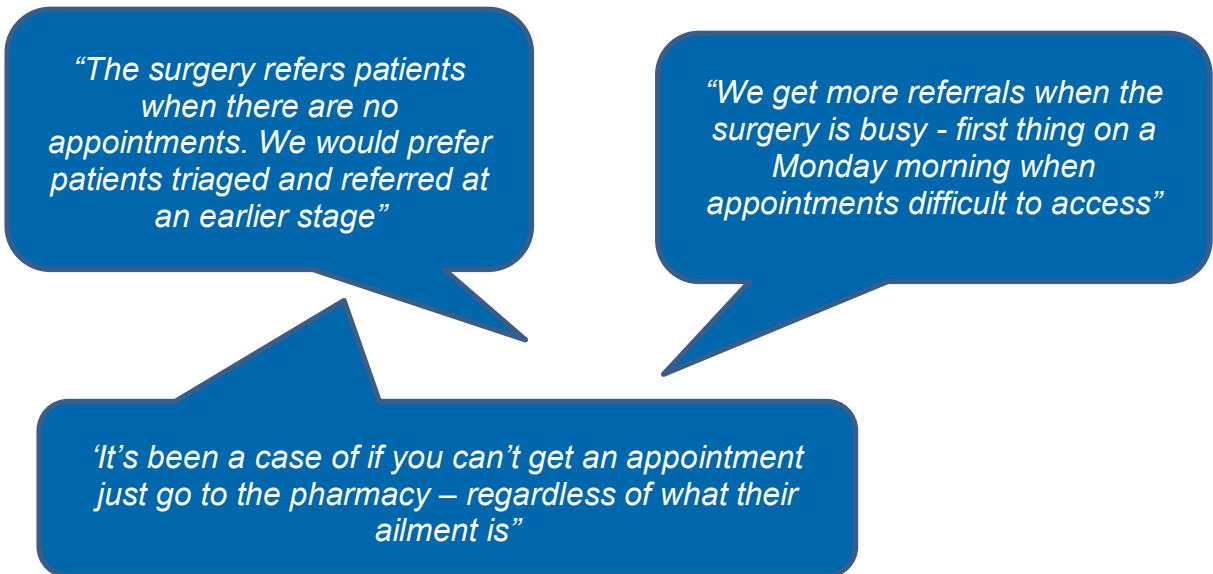
3.3.1   Inappropriate referrals

Many pharmacists continued to highlight the issue of inappropriate referrals from GPs. A minority of GPs reported improvements in the quality of referrals since the interim evaluation – they considered that practices had become more confident in referring patients to the service. However, the majority commented that they were still frequently receiving inappropriate referrals. These included the referrals of patients with conditions that are not included within the service, or patients who are ineligible to receive treatment through the service. Examples of this latter category of inappropriate referrals included patients whose age meant that they were ineligible for consultation or treatment through the service for a given condition (see Annex 1 for further information about the conditions in scope and associated restrictions).

"The GP surgeries are more confident in referring patients"

"The service hasn't really changed but the referral system from the surgery has improved"

"The number of inappropriate referrals from surgeries for things like conjunctivitis in under 2 or cystitis is constant no matter what we try"
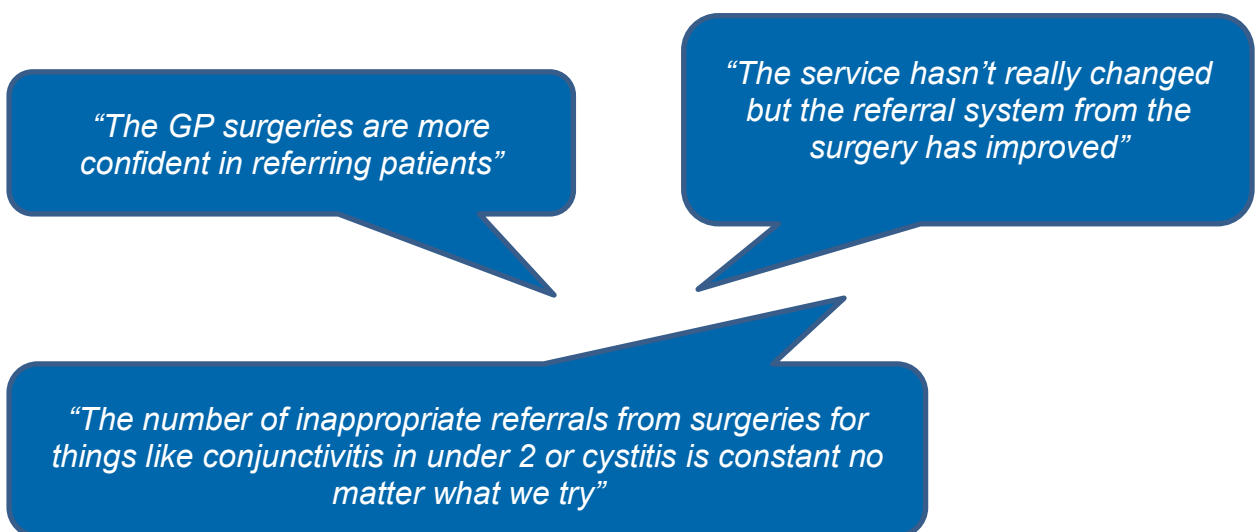
> *"Inappropriate referrals from the surgery are a big issue, they are sending the wrong patients. Sometimes we can help them but sometimes we have to ring the surgery and refer the patient back which leads to a poor patient experience"*

> *"Some patients are still referred to pharmacy who cannot be treated under the service – surgery staff require further training"*

> *"GPs fully support service, but we still see inappropriate referrals for common ailments from surgery staff on a regular basis"*

In agreement with pharmacists views about inappropriate referrals, the majority of GP practices completing the survey (10, n=11) reported that they were aware of some patients being referred back to the GP after visiting Choose Pharmacy. The reasons given for this varied but were most commonly the result of referrals which were inappropriate for the service to deal with in the first instance.

Inappropriate referrals cause inefficiencies in the use of both pharmacist and patient time – some patients will go through the consultation process prior to providing information that identifies them as being ineligible for the service and/or treatment. Patients are subsequently referred back to the GP – which may well leave them with a negative experience of the service. The process for referral back to the GP practice places a dependency on patients to communicate to the practice the reasons for the referral. However, it was noted that patients did not necessarily communicate the reasons. In some cases this has continued to result in the GP practice reaching the wrong conclusions as to why the patient has 'returned'. This in turn has led to misunderstandings about access and eligibility and 'eroded faith' in the service.

> *"We feel that this has been a negative approach from the pharmacy as many patients that we refer to them are saying that they don't cover the presenting problem or that there is not a pharmacist available"*

Pharmacists considered that the inappropriate referrals were the result of low awareness of the eligibility for the service and the ailments within scope. GP practices also noted that their understanding of the service resulted in inappropriate referrals.

> "Some surgeries are referring non-suitable patients – they don't show any understanding of the scheme. When we tell patients that we cannot help them with their condition on the scheme they get angry"

> "The reception staff are not always clear on what pharmacists can treat- often can lead to misunderstanding"

As noted in the interim findings, numerous steps have been taken to address the challenges of inappropriate referrals. Pharmacists and GP practices continued to emphasise that the LHBs had provided significant support to improve the number of appropriate referrals, for example, through:

- Briefing GP practices on appropriate referrals and eligibility for the service;
- Preparing referral reference guides for GP practices focused on the top six common ailments and containing information about 'who to refer and who not to refer'; and
- Preparing a template letter for pharmacists to document the patient's details and the reason for referral back to the GP practice.

Pharmacists have been also been adopting proactive approaches to managing inappropriate referrals. A greater proportion of pharmacists than the interim findings, reported that they had been working closely with the GP practices to improve appropriate referrals.

> "Communication between pharmacists and practice staff is key. At the beginning there was a lot of to and fro going on because practice staff did not fully understand the criteria causing frustration for patients and pharmacists. We found that patients that pharmacists referred back expected to be seen straight away. The inappropriate referrals have been resolved by meeting with pharmacists. We have also agreed that the pharmacist will give a form to the patient if an urgent appointment is needed - without a form then it could be assumed that non urgent appointment could be given"

> "The Health Board has worked hard to support pharmacies delivering the service and initial difficulties around inappropriate referrals have been resolved locally and are now less common"

> "We did have a note put together on what can be treated on the minor ailments service and we have shared this with GP surgeries and health visitors. There is more appreciation over what the minor ailment scheme is about"

> *"I spoke to the health visitor initially as we were having inappropriate referrals. That has now been resolved and we worked with the Health Board to resolve this and in fairness that has been sorted"*

> *"Over the last year we have seen a fall in the number of GP referrals, however the referrals we have been receiving are now more appropriate (i.e. no cystitis, inappropriate age referrals etc.) This has been achieved through regular feedback of inappropriate referrals and highlighting of treatment guidelines to GP surgery staff"*

3.3.2   Views about improving GP practice engagement and appropriate referrals

As noted above, a minority of pharmacists had seen a reduction in inappropriate referrals; they considered that GP practices' understanding of the service had improved. However, the majority of pharmacists highlighted the need for further steps to ensure GP practices were both referring patients, and referring appropriately, including:

- Upfront training for new GPs to improve awareness of the service;
- Training for GP practice reception staff to improve understanding of what the service can and cannot offer, and to provide advice on screening patients by phone to ensure appropriate referrals; and
- Proactive communication between pharmacists and GP practices regarding inappropriate referrals (see section 2.8.2).

> *"We need to discuss with partners and practice manager how reception staff can be trained to signpost appropriately"*

> *"It would be beneficial for the staff at surgeries to receive training much as pharmacy staff do to help the service take-off"*

3.4   Other referral pathways

Other routes into the service are becoming more common. A slight majority of pharmacists reported that 'word of mouth' consultations were increasing. These were predominantly due to patients hearing about the service from friends and family – particularly for head lice treatment (see section 4.5.1 for further information), and to a lesser extent from health visitors.

> "I know the health visitors when they see the young families on a regular basis and see the young children and they are speaking to the mothers about the scheme that we can operate in the pharmacy"

Pharmacists' views about referrals from other healthcare professionals varied. Referral pathways between the Welsh Eye Care Service (WECS) and Choose Pharmacy have been established since the interim evaluation. Accordingly, several pharmacists highlighted an increase in referrals from opticians; they considered the referral pathway to and from WECS to be working well. However, the majority of pharmacists reported limited or no 'real involvement' from health care professionals, other than GP practices.

> "We have also seen an increased number of referrals from optometrists as their understanding of the service has developed"

> "I have really welcomed the relationship with WECS"

> "We've been having a lot of referrals from optometrists – this has increased over time, they want to prescribe to us and then we're fulfilling it"

> "We are now referring to opticians, this is great as I have been able to refer patients who have been very concerned with their eyes. On a Saturday morning rather than sending them to A & E, I have been able to send them to the opticians. The referral to WECS has been a fantastic tool"

> "There's been no obvious engagement [from other health care professionals]"

> "I haven't had any referrals from any other healthcare professional"

> "It is vital to reinstate the importance of the service and reinforce to the health visitors and opticians that they can refer to us and not to the GP. The optician should know that with conjunctivitis that they can refer the patient to us and it's getting health professionals on board"

> "I haven't had the chance to work with other health care professionals to promote the service"

34

As was noted in the interim evaluation, referral pathways from out of hours services (OOHs) were considered to be essential for rural localities – due to the distance to travel for OOHs surgeries. However, several pharmacists noted that referral pathways from OOHs had yet to be established. The majority of pharmacies delivering Choose Pharmacy do not typically open at the same time as OOHs services. Therefore referrals to and from OOHs were out of scope of the initial design of the service.

"I am still seeing prescriptions from out of hours for things that I could have handed out over the minor ailment scheme. The out of hours service for us is in a rural area and I know patients will have travelled 20 miles and probably waited for 2 hours to see a GP and after seeing the GP they then have to come to our pharmacy for something I could have prescribed and dispensed for their ailment"

"There has been talk about joining up with the out of hours service and I have spoken to my colleagues in the health authority about this and it was always that it would be worked on but this hasn't happened. I don't think people are aware of what we can do"

"There is a poor relationship between pharmacists and the out of hours service – they're [the out of hours service] not engaging"

"We need to do more work with Out Of Hours – to receive referrals from them for when the surgery isn't open rather than sending people miles away"

4 Patient engagement with the service

This section examines patient engagement with Choose Pharmacy. It includes an assessment of the profile of patients using the service; trends in the ailments presented; mechanisms by which patients become aware of the service and drivers and barriers to patient engagement.

4.1 Profile of patients using the service

4.1.1 Gender

In total, 1,719 patients had registered with the service up to the end of October 2014. Consistent with the volume of consultations undertaken in each pathfinder area, a slightly higher number of patients were registered with pharmacists in Betsi Cadwaladr (870, 51%) than in Cwm Taf (849, 49%) (Figure 4.1).

More women used the service than men (Figure 4.1). For the programme as a whole, a higher proportion (63%) were female than male registrants (1,097). This is despite males and females constituting an equivalent proportion of the population in each pathfinder area[11]. However, a greater proportion of registrants in Cwm Taf are female compared with the gender profile of registrants in Betsi Cadwaladr.

A similar gender split is also observed with respect to GP consultations. This is perhaps to be expected, as Pillay et al. (2010) reported, 60% of general practice consultations and prescriptions were accounted for by females, despite an almost equal gender population split in the UK[12].

Figure 4.1 Gender profile each pathfinder site, broken down by gender

Betsi Cadwaladr: Men, 41.3%; Women, 58.7%
Cwm Taf: Men, 31.1%; Women, 68.9%
Programme total: Men, 36.2%; Women, 63.8%
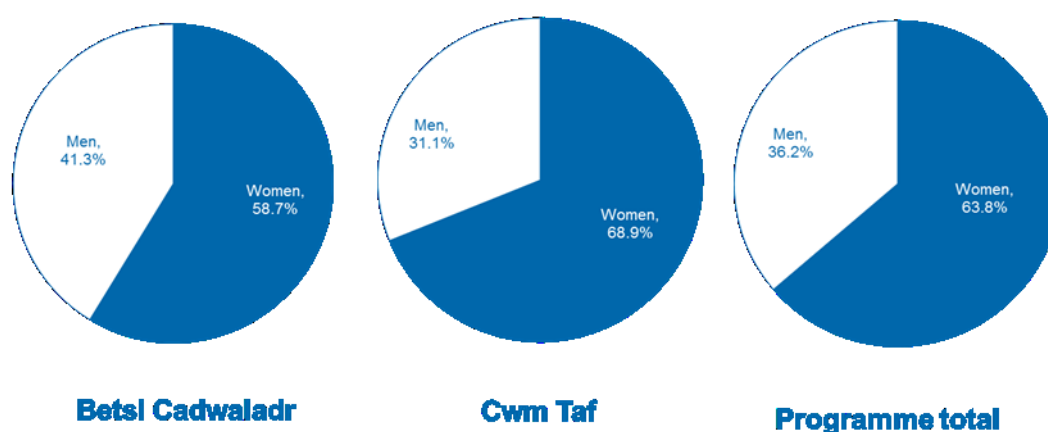
Source: eCAS data, November 2014

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[11] GP cluster data

[12] Pillay. N. et al., (2010). The economic burden of minor ailments on the NHS in the UK. (online) Available at: http://www.selfcarejournal.com/uploads/products/10024/pdf/IMS%203%3B105-16.pdf
[Accessed 2 February 2015]

The gender profile of patient consultations mirrors that of registrants – reflective of the fact that the majority of patients have only used the service once (see section 4.3). The majority of the consultations are with female patients, following the same pattern as for the users of the service (around two thirds of consultations are with female patients in both pathfinder sites).

4.1.2 Geographic profile of users

The majority of Choose Pharmacy service users come from relatively few post code areas, highlighting the geographical areas of the pathfinders. In Betsi Cadwaladr, patients from 27 different post code areas have used the service[13] – reflecting the dispersed geographical spread of the pharmacies involved in delivering the service (Figure 4.2). Users from just five postcodes represent 76% (659) of the total users.

As would be expected given the smaller geographical area of Cwm Taf, the concentration of service users is even higher (see Figure 4.3); patients from 17 post code areas[14] have used the service. However, patients from just two post code areas represent 98% of the total users (830 users) in the pathfinder site. It is not possible to assess in detail how geographical factors contribute to the uptake of Choose Pharmacy. The geographical concentration of pharmacies delivering the service within Cwm Taf is likely to have influenced the high proportion of users from just two postcodes. Feedback from the LHB suggests that the geographical uptake of the service could be influenced by the extent to which GP practices within a given area are 'stretched' to meet the growing demand for GP appointments, in addition to the relationships between a pharmacy and GP practice.

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[13] There were a small number of users of the Choose Pharmacy service who came from outside the Betsi Cadwaladr UHB area. This included one user from the Carmarthen area, one from the Cardiff area and one from the Pontypridd area. These users are not included in the map shown in Figure 4.2.

[14] Again, there were a small number of Choose Pharmacy users from outside the Cwm Taf UHB area. These include users from Cardiff (these are shown in the map in Figure 4.3), one user from the Pontypool area (one user), one user from the Neath area and one from an unknown postcode area.

Figure 4.2 Map detailing the location of participating pharmacies and the concentration of participants, Betsi Cadwaladr
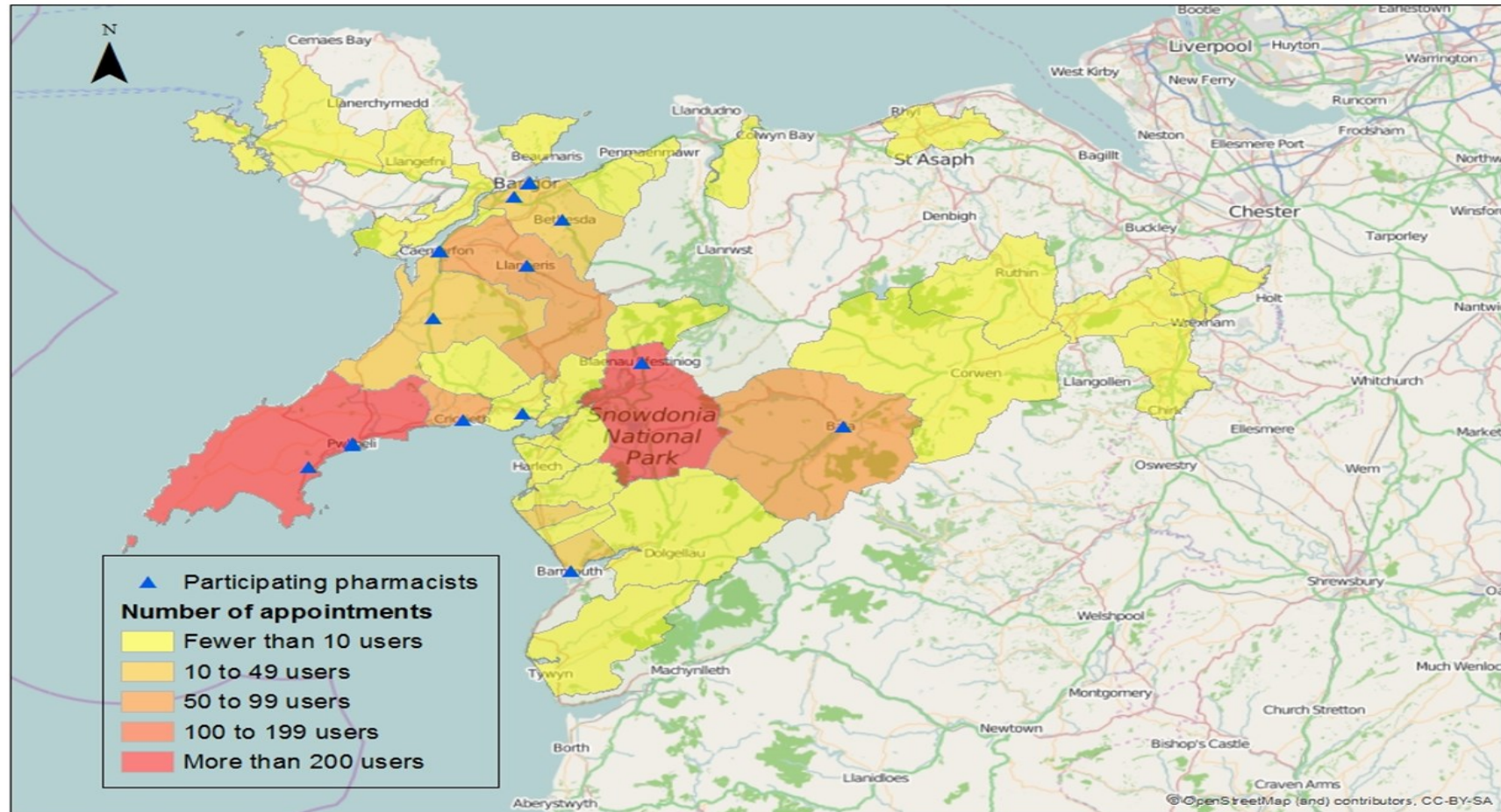
Figure 4.3 Map detailing the location of participating pharmacies and the concentration of participants, Cwm Taf
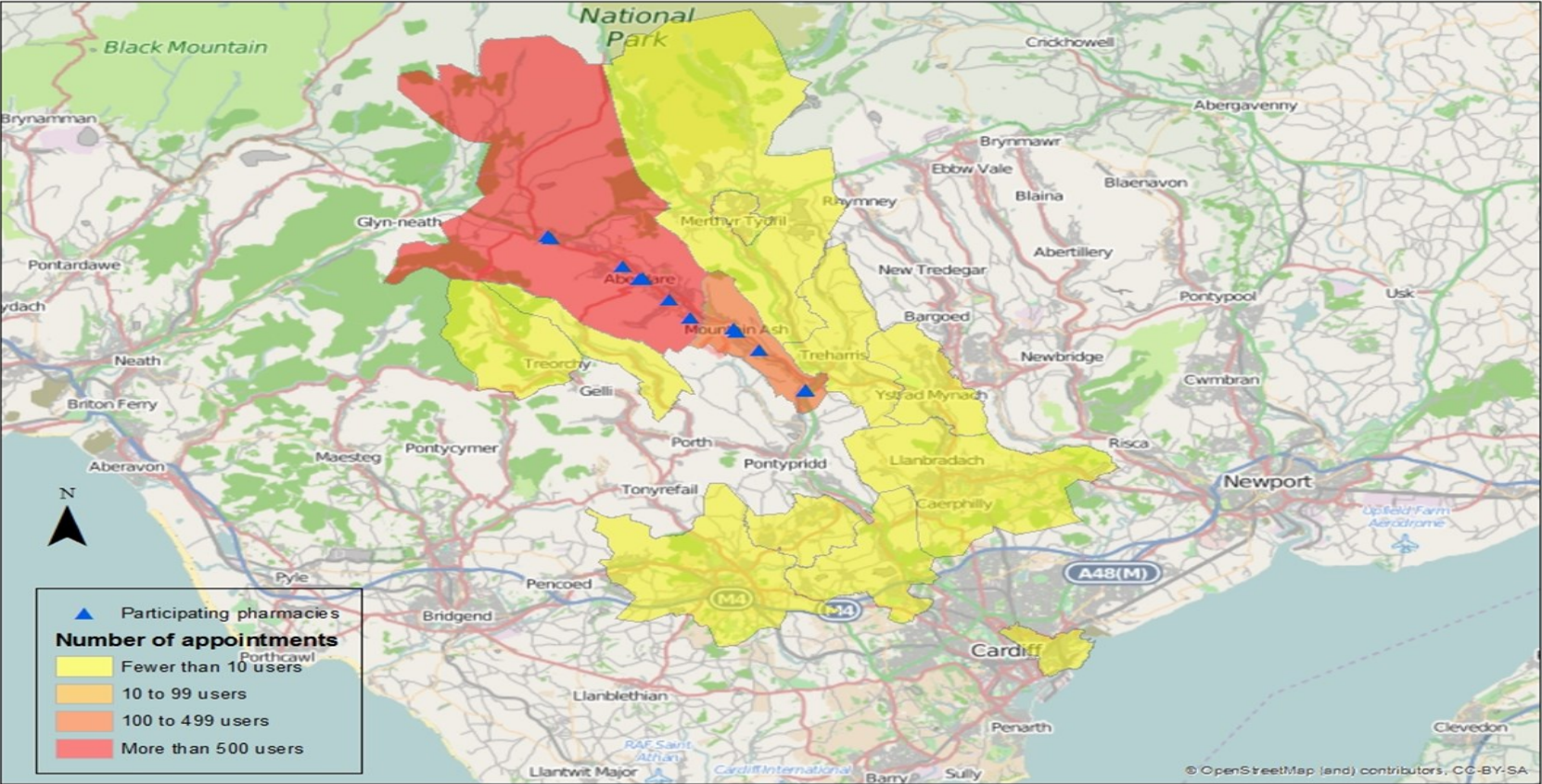
4.1.3 Age profile of registrants

Parents are the most common users of the service – seeking advice and treatment for their children's common ailments – the age profile of patients beyond this age group varies across the two pathfinders.

Consultations with patients under the age of 18 account for 39% (315) of all consultations – for the service as a whole, but also within each pathfinder area (Figure 4.4). This suggests that parents are the most frequent users of the service. In contrast to the interim findings, consultations with school age children are more common than those with pre-school age children in both localities[15].

The proportion of Choose Pharmacy patients that are under the age of 18 is higher than the relative size of the age group in the population as a whole, which represents close to 20% of the population in both pathfinder sites (Figure 4.5).

Figure 4.4   Age profile of services users by pathfinder
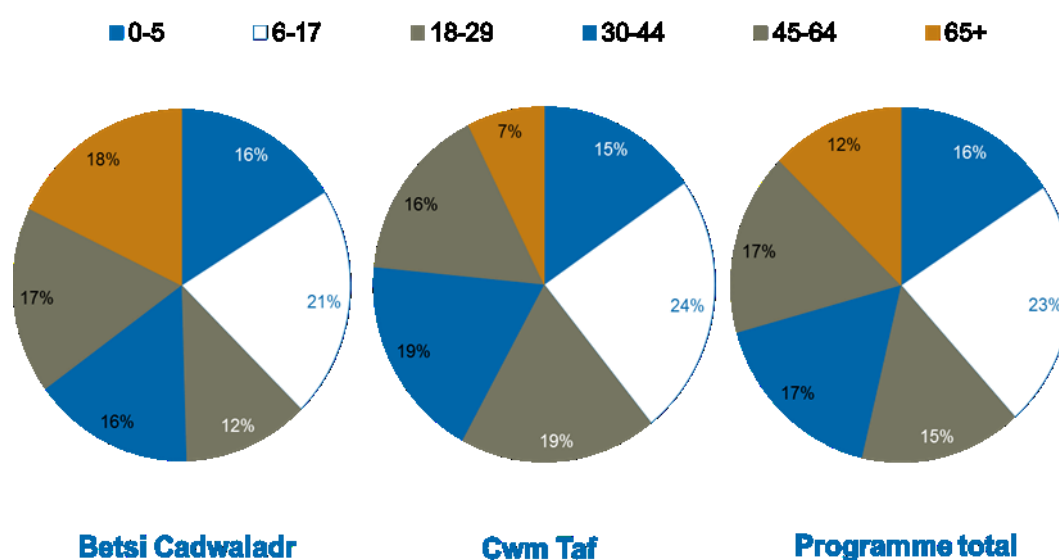
Source: eCAS data, November 2014

Beyond this group, the age profile of patients varies across the two pathfinders, and remains similar to that observed in the interim evaluation. This is despite the significant increase in demand for advice and treatment for hay fever – a non-age specific common ailment.

■ People over the age of 65 represent the second largest cohort of users of the service in Betsi Cadwaladr but represent the smallest cohort of users in Cwm Taf (despite representing a relatively high proportion of the population in this area).

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[15] The interim evaluation found that a similar proportion of pre and school age children sought advice and treatment in Betsi Cadwaladr. Consistent with the final evaluation findings, consultations with school age children were more common in Cwm Taf.

- A similar proportion of Choose pharmacy patients aged 30 – 44 and 45 - 65 use the service in Betsi Cadwaladr. In Cwm Taf, a greater proportion of patients were aged 18 – 29 or 30 – 44, compared with those aged 45 – 65, despite this latter age group representing a greater proportion of the population as a whole (Figure 4.5).

There is variable positive correlation between the age profile of the registrants and that of the population as a whole (Figure 4.5). The levels of engagement by different age groups could reflect the general demand for health services/the burden of ill health. However, the findings could also suggest that different age groups are either more or less aware of the service, or are more or less likely to engage with the service.

Figure 4.5 Age profile of Choose Pharmacy registrants compared to the population age profile in each pathfinder site
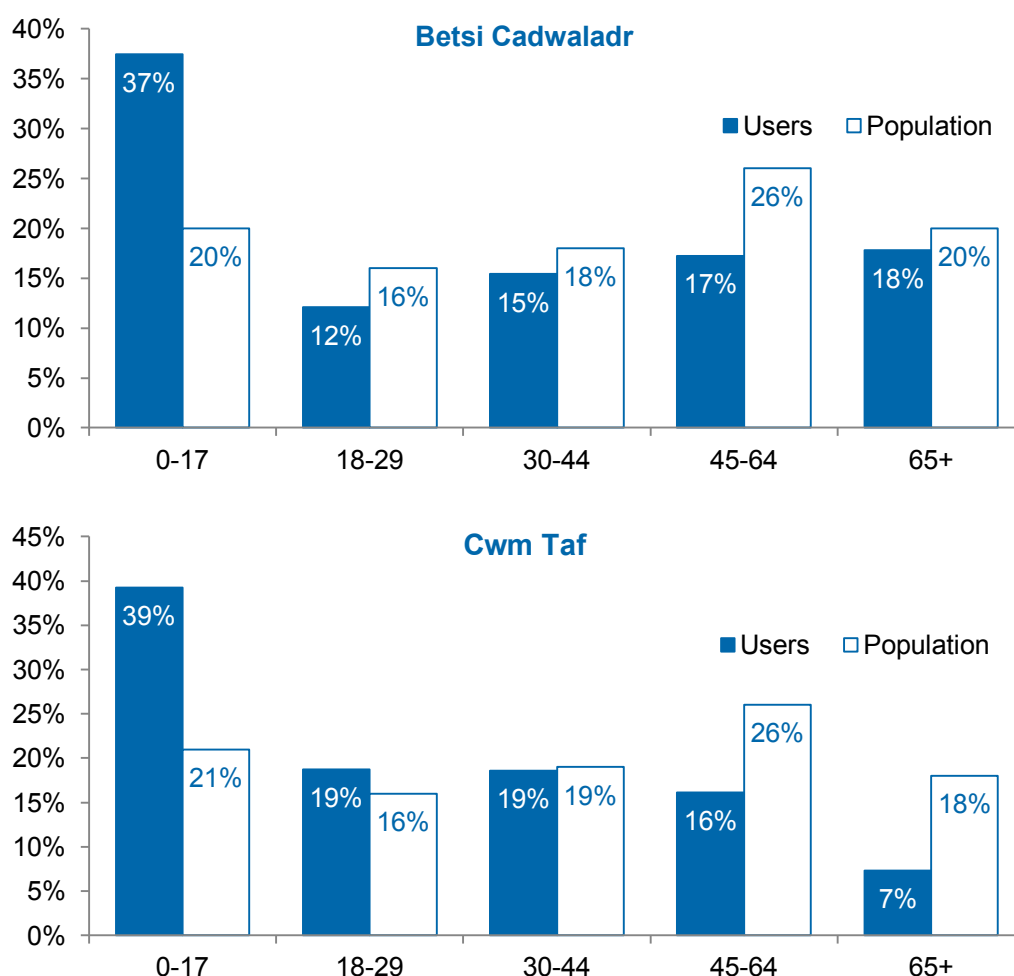
Source: eCAS data, November 2014

4.2   Variation in the common ailments presented by different age groups

Common ailments presented during a consultation vary by age group. Hay fever and conjunctivitis are frequently presented by all age groups except one (zero to five year olds for hay fever and six to 17 year olds for conjunctivitis). Presentation of other ailments varies depending on age (Table 4.1Table 4.1). Head lice and threadworm are common conditions among

patients aged under 17. Consistent with the high proportion of female patients, patients aged 18 – 64 frequently undertake consultations for vaginal thrush. Compared with other age groups, patients aged 65 plus frequently seek advice and treatment for dermatitis.

Table 4.1 Most common ailments by age group

Age group	Most common ailment	Most common ailment 2	Most common ailment 3
0-5	Conjunctivitis 68, *22%*	Head Lice 64, *21%*	Threadworms 27, *9%*
6-17	Head Lice 153, *34%*	Hay Fever 98, *22%*	Threadworms 43, *10%*
18-29	Hay Fever 103, *33%*	Vaginal Thrush 52, *17%*	Conjunctivitis 43, *14%*
30-44	Hay Fever 123, *32%*	Vaginal Thrush 61, *16%*	Conjunctivitis 46, *12%*
45-64	Hay Fever 110, *30%*	Conjunctivitis 69, *19%*	Vaginal Thrush 53, *15%*
65+	Hay Fever 54, *21%*	Conjunctivitis 54, *21%*	Dermatitis 34, *13%*

Source: eCAS data, November 2014

4.2.2 *Time lag between experience of symptoms of a common ailment and seeking advice and treatment*

The majority of patients seek advice and treatment through the service within one week of experiencing the symptoms of a common ailment. Fifty seven percent (1,196) of patients sought advice and treatment within four days of experiencing symptoms – and 65% (1,359) of patients sought a consultation with one week (Figure 4.6). The proportion of patients that had experienced symptoms for one week or prior to seeking advice and treatment has increased relative to the interim findings. These findings could suggest some change in patient behaviour with respect to self-management of their common conditions.

Differences exist between the two pathfinder sites, with 47% (472) of patients in Cwm Taf, compared with 28% (297) of patients in Betsi Cadwaladr seeking advice and treatment within two days of experiencing symptoms (Figure 4.6). A slightly higher proportion of users attend the pharmacy within one week of developing symptoms in Cwm Taf than in Betsi Cadwaladr (Figure 4.6).

Figure 4.6 Length of time with symptoms prior to consultation, broken down by pathfinder site
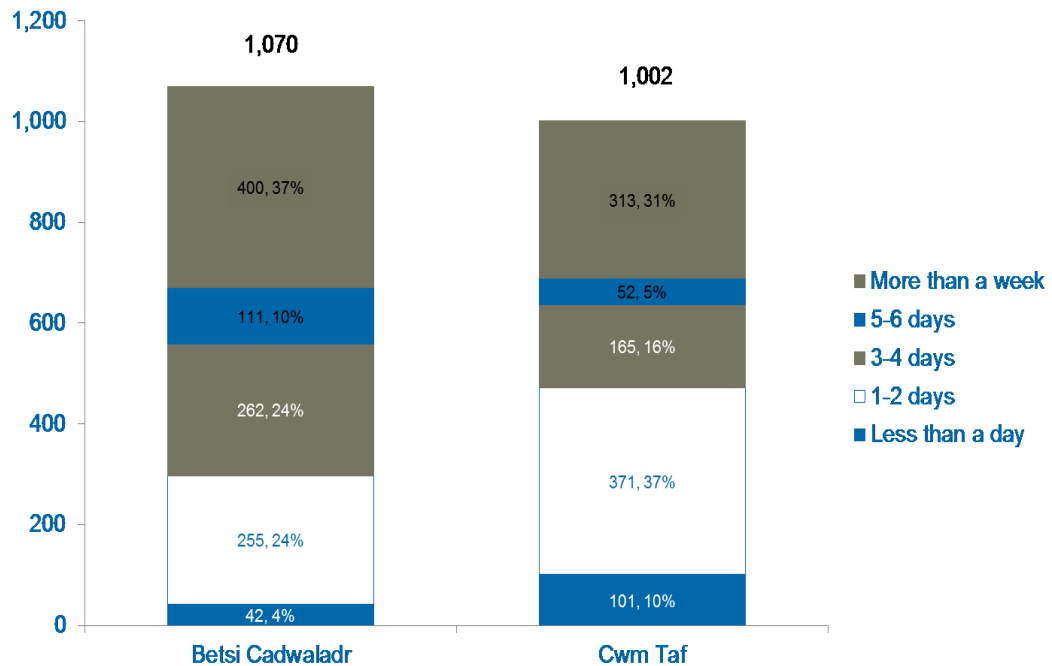
Source: eCAS data, November 2014

4.3 Repeat use of the service

Thirteen percent (261) of registrants have used the service on more than one occasion. The majority (74%, 193) of these repeat users have used the service on two occasions. However, a small proportion of repeat users have used the service on three or more occasions. A similar proportion of users in each pathfinder site have accessed the service on more than one occasion – 16% of users in Betsi Cadwaladr and 14% in Cwm Taf.

Figure 4.7   Type of ailment at repeat use appointments
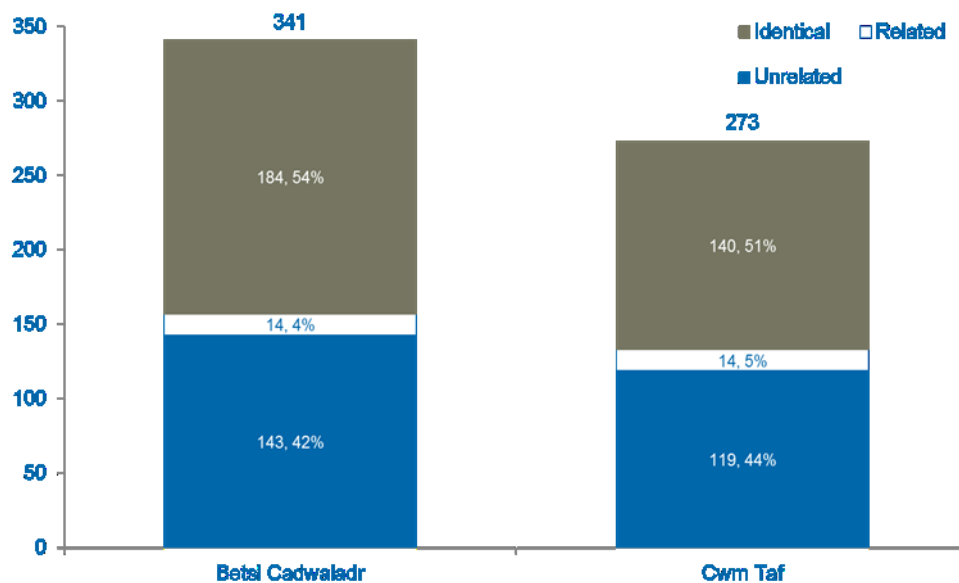
The majority of repeat consultations relate to the same ailment as the individual has used the service for previously, with 53% of repeat appointments being for an identical condition (Figure 4.7). A small number of repeat appointments were for related conditions (for example child-related conditions, such as head lice and threadworm). However, over 40% of repeat appointments were for unrelated conditions (Figure 4.7). Patients using the service for a variety of ailments can be considered a positive sign; it demonstrates the types of common ailments for which they are willing to see the pharmacist, rather than the GP.

Another positive sign is that the majority of repeat consultations were more than a month apart (55%, 127) (Figure 4.8). Fifteen percent (53) repeat visits to the service occurred on the same day as the original consultation (Figure 4.8). The majority of these same day consultations were for a different ailment, this could suggest that patients were seeking advice and treatment for more than one ailment during a single visit to the pharmacy

Figure 4.8 Time between repeat visits for the same and different conditions
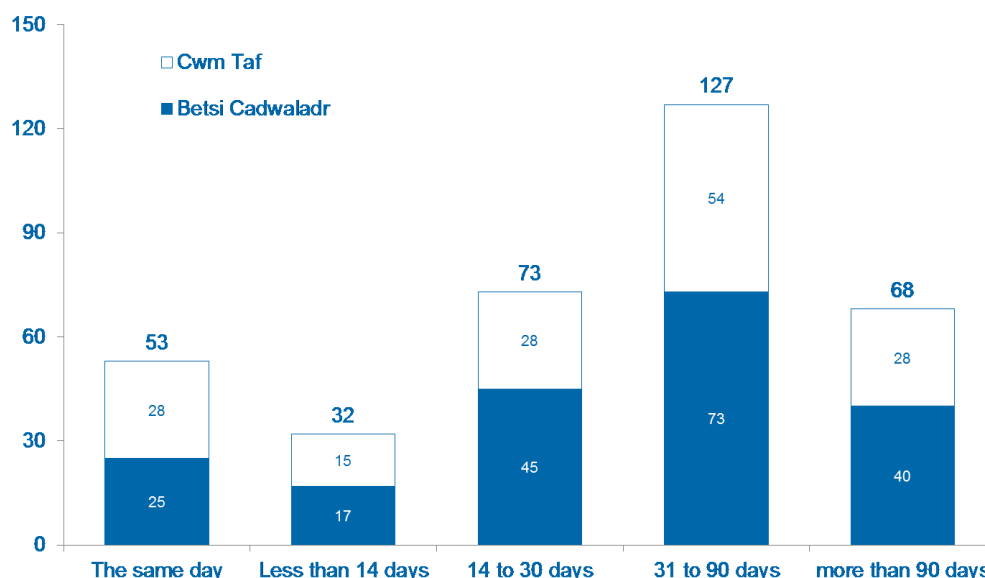
Source: eCAS data, November 2014

There are no striking patterns in the gender of individuals who have used the service more than once. Women represent a similar proportion of repeat users as for total users (67% of repeat users are women). Relative to other age groups, patients aged 30 – 64 are more likely to have used the service more than once (accounting for 44% of all repeat users, but only 34% of all service users). In contrast, patients aged under 18 represent 29% of repeat users compared to 39% of total users. This could indicate that Choose Pharmacy is particularly convenient for working age adults. These observations could also be due to the type of ailments presented by people aged 30 – 64. Specifically, hay fever is the frequently presented ailment by patients aged 30 – 64; the need for repeat treatment could also be driving the repeat use of the service.

The majority of pharmacists commented that few patients had used the service repeatedly. However, several had started to see patients return.

> *"People who have used the service previously and received treatment are coming back again. There is both more of an understanding from both the patient on how the service operates and the pharmacist on how to best deliver the service"*

> *"People are coming back for consultations for different ailments – it's been more popular than I thought it was going to be"*

> *"I am seeing patients returning after having a consultation six months ago"*

In contrast to the findings from the eCAS data, pharmacists reflected that repeat users often returned for advice and treatment for the same condition, especially for hay fever. As noted above, it is possible that patients are more likely to seek multiple consultations for advice and treatment for hay fever given the duration of the condition. It is also possible that patients might also require second line treatment[16].

The number of products per patient for particular conditions prescribed through Choose Pharmacy is restricted (for example, the maximum number of treatments per patient for conjunctivitis is two treatments per year). A minority of pharmacists considered that these restrictions impacted negatively on the repeat use of the service. Related to this, several GP practices observed that some patients were returning to the GP for hay fever treatment. Several GP practices also highlighted that the treatments offered will influence whether patients will continue to use Choose Pharmacy. If patients do not receive what they consider to be the appropriate product they will revert back to consulting the GP in the first instance.

4.4   Demand for over the counter treatments

Patients who normally purchase over the counter treatment (OTC) do not appear to be converting to Choose Pharmacy – despite concerns that this would happen as awareness of the service increased.
Pharmacists were clear that the service was not offered as an alternative to patients buying OTC medicine, nor did they promote the service with patients buying OTC medication. Only one pharmacist reported a decrease in OTC. This was particularly the case for head lice treatment. Another pharmacist

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[16] The Choose Pharmacy criteria for the treatment of hay fever specifies that patients are treated with anti-histamine tables prior to treatment with a spray.

also reported a decline in OTC sales for head lice, but considered that the OTC sales had remained the same overall.

"Initially, I'll be honest I wasn't sure how it would fit into the pharmacy so I was a bit cautious. One thing, I was concerned about the counter sales. I have counter sale staff trained to do this and the last thing I wanted to do was to affect the counter sales but this hasn't happened and I am glad. All my concerns on the scheme haven't happened and I will say that my confidence had grown for the service"

"If people are coming in for eye drops etc. then we are probably more than likely to sell it to them because I don't want to affect my counter sales and I don't think that was the purpose of the service"

"People are just viewing this service as an access to free meds. When people have reached their limit for treatment (i.e. twice a year for head lice), they just send neighbours/friends in to give a different name so they can still obtain free meds"

"There had been fewer over the counter sales of head lice treatment and been more referrals under the common ailment scheme"

4.5 Perceptions of patient engagement with the service

Stakeholders interviewed believed that the majority of patients held positive views about the service, particularly with respect to improved access to advice and treatment. Stakeholders also noted that, upon hearing about the service, the majority of patients were enthusiastic about using it.

"It has been accepted by a lot of the patients"

"Members of the public who have accessed the service are generally happy with it"

"Patients are more than happy to use the service when appropriately referred"

"They really like it, they all seem really impressed and quite grateful for it"

"Patients are overwhelmingly positive regarding the service when they have had difficulty" of getting an appointment"

46

> *"The feedback from patients is that they love it"*

> *"Once they understand it, patients engage with the service very well"*

4.5.1 Patient awareness of the service

Patient awareness has improved, but it was still considered by all stakeholders to be low. Stakeholders noted the value of the targeted promotion activities undertaken in late spring and focusing on the most common conditions and seasonal conditions such as hay fever.

> *"Efforts have been made to increase uptake and particularly around the hay fever season the service was well used"*

> *"More patients are familiar with the scheme. The word is spreading around the area – especially because it is free"*

> *"Awareness is still low, by now I would expect more people to know about it. When I mention it to people, they haven't heard about it – but on hearing about it they say that they will use it"*

The majority of pharmacists reported that patients become aware of the service through the GP practice. In contrast to the relatively low number of repeat users of the service (See section 4.3), pharmacists also considered that prior experience of using the service was a common route by which patients knew about the service. Pharmacists from both pathfinder areas had observed that 'word of mouth' promotion of the service was also increasing. Newspaper articles were felt to be the least likely way in which patients had heard about Choose Pharmacy.

> *"People are starting to come back now as they have seen the leaflets about how they can use the service rather than go to the GP"*

> *"Word of mouth is increasing. One child gets head lice at school – it spreads and so everyone will come in for head lice treatment. Or you get a whole family coming in for a treatment for them all"*

"There has also been a recent flurry of referrals for patients with head lice - this was as a result of one parent coming in with her child and receiving a good service and passing on the results through word of mouth to other parents"

"We have had a recent chicken pox spurge and I've been treating these and one mother came and then passed on that they had been to other mums"

"People are hearing from friends and family along with hearing from the surgery. Once the mother is on board that helps, the kids will come and the husband. It seems as though the mother is the central part and once she knows about it then there is an increase"

Despite the rising demand for Choose Pharmacy, stakeholders were clear about the need for continued efforts to raise awareness of the service. This included making better use of patient access points across the community and a dedicated promotion campaign.

"I think there could be a PR campaign highlighting what is available. We need to work with the surgery in making posters and making patients more aware"

"I haven't seen a lot of advertising for it although there were a few posters for hay fever over the summer"

"I haven't seen anything in the local media - that is one way forward"

"We need more general posters about the scheme – they need to be displayed in more public places such as community halls rather than just in pharmacies or GP surgeries"

"If we could promote it even higher again so there is direct access and they don't even ring [the GP] that would help other patients who really do need to see the doctor, it frees their time up"

4.5.2 Patients' expectations of the service

Pharmacists consistently reported that a significant proportion of patients misunderstood the service. Managing patient expectations was noted as a key challenge for the service by the majority of stakeholders – and one that impacted on patient experience. In particular, misunderstandings about the availability of antibiotics and eligibility for the service (specifically age restrictions) were frequently cited. In some cases, pharmacists and GP practices believed that this has led to a poor experience of Choose Pharmacy – which in turn impacted on the reputation of the service, and future demand. Several pharmacists also noted that many patients believed that referral from the GP practice meant that they would be seen immediately. GP practices also reported that patients believed that a pharmacy referral back to the practice meant that they would be seen immediately. A minority of pharmacists also reported that some patients expected to obtain their treatment of choice without undertaking a consultation with the pharmacist.

"Patients expectations of the service are not realistic, they want antibiotics, expect an appointment there and then, and they're not happy when only advice is offered"

"The major challenge in delivering the service is managing client expectation"

"There has been some frustration from patients underestimating the time that they can expect to wait for a consultation"

"Patients think that a referral from a surgery dictates that they must be seen NOW"

"We need more education for patients so they know that there may be a wait to access pharmacy services just like there is to see a GP"

The majority of pharmacists considered that misunderstandings about the service resulted from in-appropriate referrals from the GP practice. As noted in section 3.3.1, the LHB, pharmacists and GP practices have taken action to ensure appropriate referrals to the service, as well as to manage patient expectations about the urgency with which they will see a GP if they are referred back to the practice.

Pharmacists are also managing patient expectations proactively, providing advice about what the service does and does not offer prior to undertaking a consultation (see section 3.3.1), and explaining to patients why some treatment options are unavailable.

> *"Patients referred with a cough or cold expect to get antibiotics. We are overcoming this by giving advice about the management of these conditions and explaining why antibiotics will not always be prescribed for these conditions"*

All stakeholders noted the importance of an ongoing focus on ensuring that patients are not only aware of Choose Pharmacy, but that they also understand what the service can (and cannot) offer.

4.6 Drivers and barriers to patient engagement

4.6.1 Drivers to patient engagement

Improved access to healthcare was identified by pharmacists and GP practices as the key driver for patient engagement. So too was convenience of location.

Pharmacists also identified that a successful prior experience of the service and recommendations from a GP increased the likelihood of patients engaging with the service.

In contrast, GP practices identified trust in the quality of care provided in the pharmacy setting to be important.

GP practices, and to a lesser extent, pharmacists, also considered awareness that treatment recommended through the service would be free was also a key driver.

> *"I think price is important-many of our patients are very reluctant to pay for medication"*

> *"It's really important that the receptionist mentioned that it's free. Unless it was free they wouldn't go, but once we say it is a free service they are very happy to go there"*

> *"The first thing I get asked is: is it free?"*

> "Most are okay especially when we assure them they will not have to buy over the counter products but will be issued a prescription by the pharmacist"

> "Patient finding it very useful as they do not have to pay for the service"

> "The only reason it is working in our area is because the service still leads to a free prescription"

4.6.2 Barriers to patient engagement

Preference to see a GP and perceived severity of the condition were identified as the key barriers to patient engagement by both pharmacists and GP practices. Both stakeholder groups also considered that the restricted formulary could decrease the likelihood of patients using the service.

4.6.3 Behavioural change

GPs and pharmacists consulted highlighted the importance of behavioural change. All stakeholders noted that a significant cohort of patients will prefer to see the GP for advice and treatment for common ailments. Changing the behaviour of these patients was considered to be particularly challenging – especially if they have on occasion visited the pharmacy at a time when the pharmacist was unavailable to undertake the consultation or they did not have a positive experience.

> "Some sometimes say 'No I want to see a doctor' but it is very few"

> "Often we find that if they present with one symptom that comes under the service when advised to go to the pharmacy they will then suddenly develop another symptom which does not come under the service"

A minority of stakeholders considered that open access surgeries, in particular, had acted as a barrier to patient engagement with Choose Pharmacy, as many patients are 'happy' to sit and wait for a GP appointment. Pharmacists noted that patients with complex medical needs were identified as patients that were more likely to be 'unconvinced' by the service.

Stakeholders had not observed any trends in patients that were most likely to 'convert' from the GP practice to the pharmacy. However one GP practice reflected that patients that attended the practice infrequently were more inclined to 'try' Choose Pharmacy. Another considered that older people were more receptive to the service compared with younger people.

5   Outcomes

This section examines stakeholders' views about the outcomes arising from the Choose Pharmacy pathfinders. Consultation with stakeholders explored whether and how the service had delivered change and the desired outcomes set out within the Choose Pharmacy logic model[17] (see Annex 4).

There was a high degree of consensus among stakeholders that the progress made to date demonstrates that the service is feasible and has the potential to deliver significant change. However, many considered that the programme had yet to do so on a significant scale – due to the low demand in the first few months of the service, and the relatively short timescale since its inception.

"I think eventually it will start to show benefits but it is going to take a while"

"It has further to go, it's still in its infancy"

"I think we're still in the early stages and people don't understand the scheme really"

"It's getting there but I think we haven't reached capacity yet"

Nonetheless, the interviews with, and survey of stakeholders identify, to varying degrees, outcomes consistent with the pathfinders' logic model. Furthermore, no unintended consequences associated with the introduction of the service were identified.

5.1   Job satisfaction and expanding the role of the pharmacist

Delivering the service is leading to improved job satisfaction for pharmacists. Pharmacists continued to report that delivering the service had extended their roles.

The majority of pharmacists reported that being involved with Choose Pharmacy had given them the opportunity to apply and develop further their existing skills and expertise – to help patients and support more effective use of health care services.

Of the 11 pharmacists that responded to the survey, nine agreed that Choose Pharmacy had had a positive impact on their job satisfaction (Figure 5.1). However, all pharmacists considered that delivering the service had expanded their role (Figure 5.1).

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[17] The Choose pharmacy logic model underpins the framework for the evaluation of the Choose Pharmacy pathfinders. It sets out the programme's inputs, activities, short and medium term outcomes, and longer term impact.

Figure 5.1   Job satisfaction and expansion of the pharmacist's role

Delivering Choose pharmacy has:
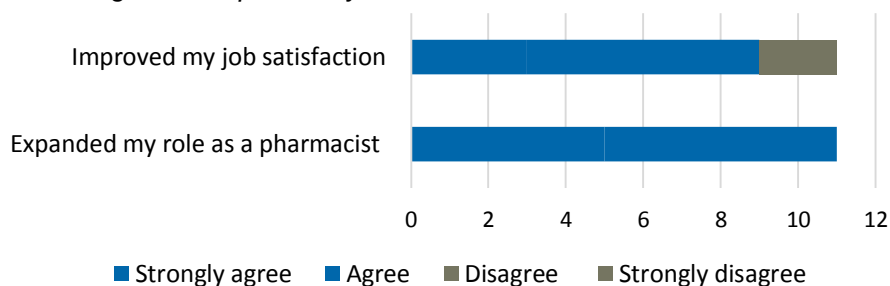
Data source: Pharmacist survey (n=11)

> *"When I first started it, I thought all we were going to get were scripts for Calpol but actually we have had some good consultations and they have appreciated the advice. I have had some good job satisfaction and I didn't expect that"*

> *"I get a lot from it personally as the patients value the service and appreciate what you've done"*

> *"The service is very useful for me as a pharmacist, it has really filled a gap – it has been really useful for patients in providing a stop gap as it gives them somewhere to go where they can ask for advice in a confidential setting and then receive treatment"*

> *"It has brought pharmacists into the mainstream national health […] it has made us part of the answer to people's health"*

5.2   Improved access to advice and treatment for common ailments

Choose Pharmacy provides patients with better access to common ailment services. Pharmacists repeatedly reported that patients welcomed the ease of access to the service. Furthermore, both pharmacists and GP practices

considered that improved access to advice and treatment was the key driver for patient engagement with the service.

As noted below (Section 5.4), pharmacists identified that demand for the service often increases when GP practices are closed, and that patients are often referred to the service when GP appointments are 'fully booked' – providing evidence that the Choose Pharmacy service has improved access to care for common ailments. Others noted that rapid access to the service had led to improved patient satisfaction.

> *"Patients love the accessibility! They walk in, they get their consultation and then get the prescription. The whole process is in one and again I go back to the mum scenario with two screaming kids and this is all done in five minutes"*

> *"It's quicker for them to come and see the pharmacist rather than wait in a doctor's surgery"*

> *"It's about seeing the most appropriate person really"*

> *"People like the fact you can just walk in and get a consultation straight away, then get treatment on the national health if they need it"*

As highlighted in section 2.6.2 the capacity to undertake timely consultations could reduce access to services. Furthermore, patients' expectations to be seen immediately could also impact on perceptions about the extent to which Choose Pharmacy improves access (see section 4.5.2). In these instances, it was considered that patients frequently reverted back to the GP practice for advice and treatment for their common ailment.

5.3 Partnership working and integration of health care services for common ailments

Partnership working and relationships between GPs and community pharmacists are being strengthened, albeit to varying degrees across the different localities. This is driven largely by the necessity to develop effective referral pathways between the pharmacies and GP practices and other health care professionals. The extent to which this was apparent was similar to that observed at the interim findings. Specifically it was dependent on the strength of existing relationships, with limited changes in relationships that were previously less well established.

Eight out of the 11 pharmacists that responded to the survey considered that Choose Pharmacy had strengthened relationships between pharmacists, GPs and other health care professionals, and to a lesser extent (seven out of 11 survey respondents), helped to integrate different health care services

(Figure 5.2). Six out of ten GP practices responding to the survey also reported that relationships with pharmacists had been strengthened.

Figure 5.2   Perceptions of changes in relationships between health care professionals and the integrations of care for patients with common ailments
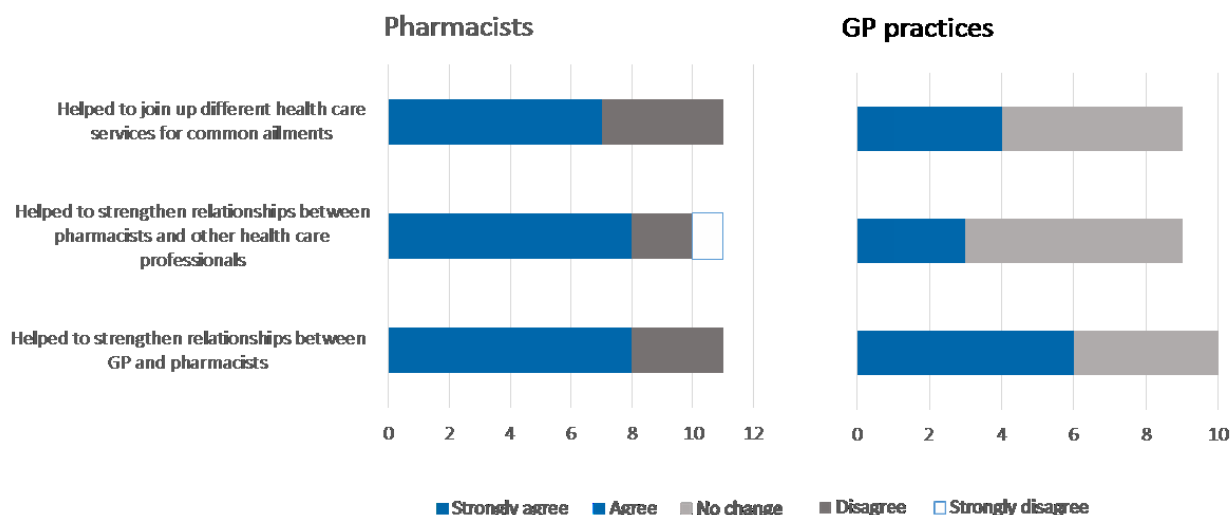
Data source: Pharmacist survey (n=11), GP practice survey (n=10)

Collectively, these findings, together with the positive feedback regarding referrals routes to and from WECS (see section 3.4) suggest that the foundations are there to enable Choose Pharmacy to support better integration of health care services for patients seeking advice for common ailments.

5.4   Patient's understanding of primary care resources for managing common ailments and perceptions of pharmacy services

The service is helping to increase public understanding of support available at the pharmacy. Seventeen out of the 21 pharmacist and GP practices responding to the survey considered that the service had improved patients' trust in the quality of care provided by pharmacists (Figure 5.3). A further 19 of the 21 survey respondents also considered that Choose Pharmacy had improved patient awareness of the services offered by the pharmacy (Figure 5.3).

Figure 5.3   Perceptions of changes in patients behaviours and perceptions of   pharmacy services
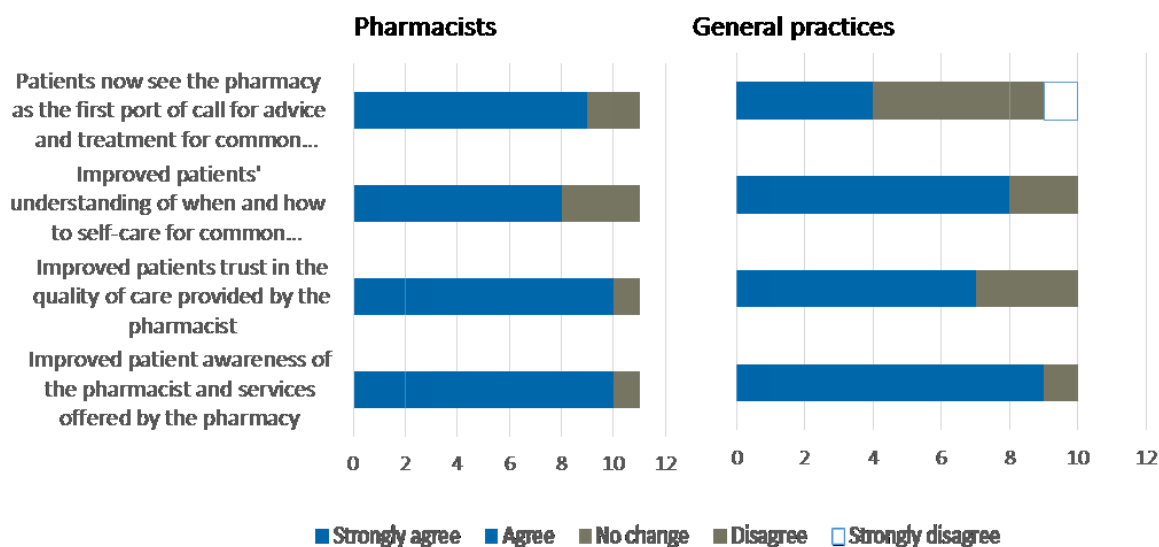
Data source: Pharmacist survey (n=11), GP practice survey (n=10)

5.5   The pharmacy as the first port of call for treatment and advice for common ailments

Nine out of the 11 pharmacists responding to the survey also considered that patients now see the pharmacy as the 'first port of call for advice and treatment for common ailments'. In contrast, 6 out of the 11 GP practice survey respondents considered that no shift in patient behaviour in this respect had been observed (Figure 5.3). Indeed several pharmacists reflected that volumes of patients increased on days when the GP practice were closed or at times when practices are particularly busy. This could suggest that a proportion of patients will be more inclined to use the service as an alternative when they are unable to access the GP practice, rather than using it as the '*first port of call.'*

5.6   Self-management of common ailments

Sixteen out of the 21 pharmacists and GP practices responding to the survey also believed that the service had led to improvements in patients' understanding of when and how to self-care for common ailments. The increase in the proportion of patients that experience symptoms for a longer period of time (prior to seeking a consultation) could also suggest a shift in an understanding of when and how to self-care (see 4.2.2). However, one GP practice and one LHB considered that more could be done to promote self-care. This could include providing patients with a short leaflet / card, at the end of a consultation, about 'how to use' the treatment to ensure it is effective, and guidance on what to do should the symptoms re-occur.

"A lot of patients are using the service as a first port of call, some people do still call through but have no reluctance to go to the pharmacy if recommended'

"Now some of them don't even ring us to start with, the first point of contact is the pharmacy"

"It has developed the professional image of pharmacists and pharmacies"

"Patient feedback has been good, with most saying they think this is an appropriate role for pharmacists"

"It's raised the profile of the pharmacy in the community, with clients becoming aware that the pharmacy can be considered as the first option for the management of some of the ailments covered under the scheme"

"I think we have gained respect from patients and I probably wasn't expecting that. I get very positive feedback from patients on the scheme"

"It has reduced the demand for appointments for minor illnesses in our practice. However I still feel that patients could seek information/self-medicate for a large number of conditions without even the need for a pharmacist. A huge public health campaign is required"

"I think that patients respect the fact that this is handy and that pharmacists know their stuff. I feel like we have gone up a notch in their expectations"

5.7   Quality of care

The evidence presented in this evaluation indicates that the service is maintaining the quality of care for patients seeking advice and treatment for common ailments. In part, Choose Pharmacy aims to provide a more cost-effective means of addressing common ailments than GP services. As a minimum it would achieve this if a cheaper input is used (a pharmacist's time rather than a GP's) and the quality of the service is maintained.

While resolution of symptoms and other patient reported outcomes have not been explored in this evaluation, evidence that the service is maintaining the quality of care is apparent. Pharmacists noted that they had referred few patients back to the GP for reasons other than being in receipt of

inappropriate referrals (see section 2.5). Several GP practices also feedback that the majority of patients that had been referred back had been inappropriately referred to the service in the first instance.

Related to this, several GPs noted that they were unaware of any duplication of service with respect to patients seeking a follow-up appointment with the GP subsequent to a consultation with the pharmacist. This could indicate that patients are satisfied with the pharmacist's advice and treatment and that the symptoms have been resolved. However, several stakeholders noted that patients' perceptions about the quality of the service will be influenced by whether they consider they were given the 'right' treatment for their common condition.

5.8 Demand for GP consultations and use of health care resources for the advice and treatment of common ailments

The majority of stakeholders consulted considered that Choose Pharmacy had supported a reduction in the demand for GP consultations for advice and treatment for common ailments. The impact of Choose Pharmacy on the demand for GP consultations is analysed in section 6.

Fifteen of the 21 pharmacists and GP practices surveyed (from both pathfinder areas) considered that Choose Pharmacy had led to reduced demand for GP consultations (Figure 5.4). Eleven of the 21 pharmacists and GP survey respondents considered that the service had also reduced demand on other health care professionals (Figure 5.4).

Figure 5.4 Perceptions of changes in the use of different health care resources for advice and treatment of common ailments
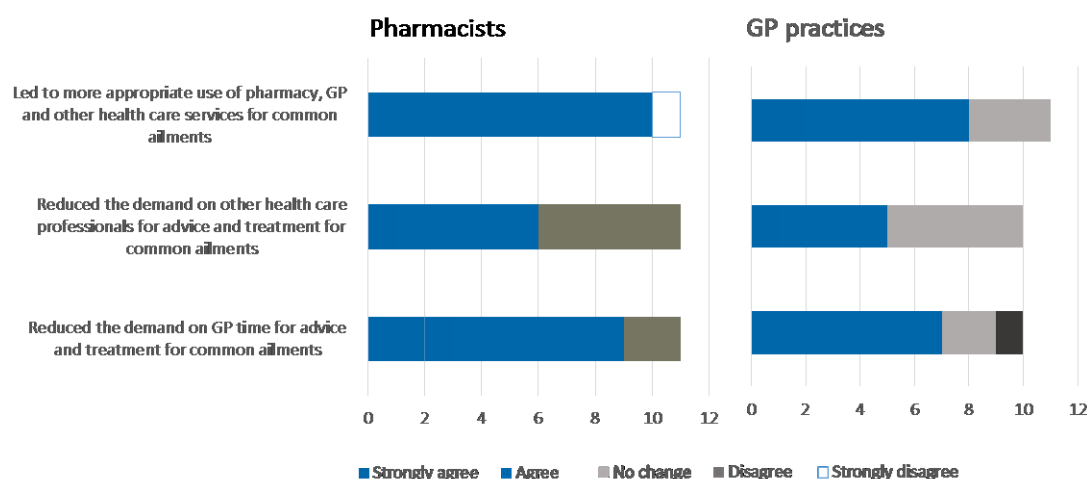
Data source: Pharmacist survey (n=11), GP practice survey (n=10)

"I think it has saved some GP appointments, I think in some instances, it has reduced the pressure on minor injuries"

"We see less eye infections and thrush"

"Doctors are definitely saying their consultations are heavier, they are seeing more appropriate patients but it is right as that's what they are trained for"

"The introduction of this has coincided with the us no longer having a nurse led minor ailments clinic so as a consequence as doctors we are seeing more minor illness because the clinic no longer runs but the choose pharmacy scheme has probably reduced this"

"I do think it has eased the demand on GP surgeries but I don't know what their feedback is on it. I do feel that we have helped them but I think there is a long way to go. We have capacity and I think we can help more. We are getting there but far off from it being completed"

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6 Impact analysis

This section presents our findings of the impact, and costs and benefits of the Choose Pharmacy pathfinders. It is based on eCAS data, GP prescription data and a literature search for proxy measures to monetise the impact of the Pathfinder on demand for GP consultations. Supplementary analysis using data from Secure Anonymised Information Linkage (SAIL) data bank from Swansea University is also presented.

6.1 Introduction to the approach to assessing the impact of Choose Pharmacy on GP prescriptions

The primary focus of the impact evaluation is to assess the extent to which Choose Pharmacy (and the pharmacy) becomes the default option for patients seeking advice and treatment for common ailments. Understanding the impact of the service on the use of GPs for these ailments is therefore critical to this assessment. The impact analysis has therefore sought to assess the change in the number of consultations for common ailments as a result of the operation of the Choose Pharmacy service.

In order to identify the impact of the service, a counterfactual case needs to be identified to assess what would happen in the two pathfinder areas if the service was not introduced. In order to do this, a Difference in Difference (DiD) approach has been used to estimate the impact of Choose Pharmacy on GP appointments and GP prescriptions (Figure 6.1).

The DiD analysis generates a DiD co-efficient, which defines the impact of the service; a DiD co-efficient equal to zero would indicate that the service has had no impact; a negative DiD co-efficient suggests that the introduction of the service has led to a reduction in the number of GP-prescriptions for common ailments; whereas a positive co-efficient would suggest an increase. Further details of the DiD approach is set out in Annex 6.

Figure 6.1 Overview of difference in difference approach to assessing impact

1. Compare the number of GP prescriptions in Cwm Taf and Betsi Cadwaladr before and after the implementation of the Pathfinder

The comparator groups
2. Make before and after comparisons of the GP prescriptions in similar non-participating areas

3. Compare the change in GP prescriptions in the pathfinder areas to the change in GP prescriptions in the comparator groups accounting for any differences in the observable characteristics of each group that may influence outcomes

6.1.2 Selection of comparator groups

GP cluster data, produced by the Public Health Wales Observatory in 2012[18] was used to select the comparator sites for each pathfinder area. From this data, each pathfinder site was "matched" with a closely related comparator group. The "matching" exercise was carried out using the following categories:

- Age;
- Deprivation categories;
- Drivetime bands;
- Rural/urban classification; and
- Burden of disease for five diseases (Hypertension, Asthma, Diabetes; CHD; and COPD).

Using this methodology set out in Annex 6, four comparator areas were identified, two for each pathfinder area (Table 6.1). The appropriateness of these comparator groups was further tested by assessing the trends in the number of GP-prescriptions prior to the introduction of the Choose Pharmacy service (see 6.2).

Table 6.1 Initial selection of the comparator areas for Betsi Cadwaladr and Cwm Taf

Pathfinder site	Comparator area 1	Comparator area 2
Betsi Cadwaladr (Arfon, Dwyfor and Meirionnydd)	Hywel Dda	Remaining areas of Betsi Cadwaladr
Cwm Taf pathfinder (Cynon Valley)	South Rhondda	Merthyr Tydfil

6.1.3 Data used

The number of prescription items dispensed by GPs each month has been used to investigate the impact of the Choose Pharmacy service. It is hypothesised that the number of prescribed items would decrease as a result of the introduction of Choose Pharmacy, as individuals would no longer attend their GP to obtain prescriptions for minor ailments. They would instead attend the pharmacy (and the prescriptions received would not be included in this data).

Separate analysis was undertaken for following prescription groups:

- GP-prescribed items per month for the full Choose Pharmacy formulary;
- GP-prescribed items per month for items on the Choose Pharmacy formulary for which there is a one-to-one indication[19]; and

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[18] Data available at:http://www.publichealthwalesobservatory.wales.nhs.uk/gpclusters. These data are available for each of the seven University Health Boards (UHBs), and are broken down for smaller areas, based on GP clusters. In total, there are 64 GP cluster areas in Wales

[19] Formulary items that will only be prescribed for common ailments, compared to items such as paracetamol which could be prescribed for ailments outside of the scope of Choose Pharmacy

- GP-prescribed items per month for the most common ailments presented by patients using Choose Pharmacy: Hay fever, conjunctivitis, head lice (and scabies), vaginal thrush.

The analysis reveals that the number of GP-prescribed items issued each month is extremely variable (see Annex 6 for examples). This is particularly the case where the data is broken down by condition. This makes estimating the effect of the Choose Pharmacy more difficult. Specifically, the monthly variation means it is not appropriate to analyse the impact using the aggregated annual number of GP-prescriptions (due to the small number of months for which data is available). Instead, it is necessary to assess monthly (rather than annual) variations in the number of GP-prescriptions between the pathfinder and comparator groups.

6.1.4 Modelling approach

Given the relatively low initial demand for the Choose Pharmacy service, the DiD in the number of GP-prescriptions each month was investigated to examine when an impact might start to be seen.

The DiD coefficient in the first few months of the Choose Pharmacy programme is positive, suggesting an increase in the number of prescriptions issued by GPs as a result of Choose Pharmacy. Despite this, in general the DiD coefficient decreases over time, indicating that there is a reduction in the number of prescriptions issued by GPs. However there is considerable monthly variation in the DiD coefficients (see Annex 6 for an example of the monthly variation).

Due to the variation in the number of prescriptions issued and the relatively small number of post-introduction monthly data points (12 in the treatment and comparator group), it was not possible to obtain robust results for the DiD coefficients using aggregate level data (derived from aggregating the number of prescriptions over time to produce an annual number of prescriptions issues). Instead DiD analysis was undertaken using prescription data for a single month. Prescription data from August 2013 and August 2014 for each of the GP-prescribed item groups described in section 6.1.3[20]. The same month has been chosen for before and after comparisons to avoid the results being biased by monthly variations in the number of prescriptions issued. August 2013 was selected as the 'before' month as it was the final month prior to the introduction of Choose Pharmacy.

The following approaches to modelling were taken using the prescription data specified above:

- The number of prescriptions was assumed to equal the number of people receiving a prescription in a month. These individuals were assigned the value '1' in the model;

- The remaining members of the population (based on Welsh Government/ONS population projections) are assumed to not receive a

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[20] GP-prescriptions for all items on the Choose Pharmacy formulary; GP-prescriptions, for those items on the Choose Pharmacy formulary for which there is a one-to-one indication; and GP-prescriptions for items for the most common ailments presented by patients to the Choose Pharmacy service.

prescription in a month. These individuals were assigned the value '0' in the model;

■ Linear Probability and Binary Probit models were then used to predict the probability that an individual would receive a prescription in a particular month.

6.2 Test of trending together assumption to assess the appropriateness of the comparator groups

The most important assumption for the DiD approach is that the trends in the number of GP-prescriptions in the comparator groups are similar to those observed in the pathfinder areas – i.e., that they "trend together" in the period before the introduction of the Choose Pharmacy service.

Data for GP-prescriptions issued between September 2011 and August 2013 were examined to assess whether the pathfinders and comparators groups 'trend together' prior the introduction of the service (Table 6.2). The analysis reveals that, for some prescription groups, the trends in the number of prescriptions prior to the introduction of Choose Pharmacy differ significantly between the pathfinder and comparator sites (these are highlighted in red in Table 6.2). In contrast, the 'rest of Betsi Cadwaladr' and Merthyr Tydfil appear to be the better comparator sites for Betsi Cadwaladr and Cwm Taf, respectively – as they trend together with their respective pathfinder site for all prescription groups analysed.

Table 6.2 Trend of differences between pathfinder and comparator group prescriptions

Prescription group	Betsi Cadwaladr compared with		Cwm Taf compared with	
	Rest of Betsi	*Hywel Dda*	*South Rhondda*	*Merthyr Tydfil*
GP prescriptions for all items in the Choose Pharmacy formulary	-0.0083	0.0684	-0.4774	-0.2098
GP prescriptions for items in the Choose Pharmacy formulary for which there is a one-to-one indication	-0.0089	-0.0209	-0.0177	0.0051
GP prescriptions for hay fever treatment	-0.0468	0.122	-0.1515	0.0503
GP prescriptions for conjunctivitis treatment	0.0034	-0.007	-0.0524	0.0152
GP prescriptions for head lice and scabies treatment	0.0038	0.00126	-0.0041	-0.0054
GP prescriptions for vaginal thrush treatment	0.0081	0.0101	-0.0239	-0.0239

The trend of the differences between the pathfinder and comparator groups should be close to zero if the number of prescriptions issued in each area trend together

For all the cells in Table 6.2 that are not highlighted, the comparator groups will be used in the DiD models described, and the results are presented below.

6.3 Impact analysis of the change in GP prescriptions

The impact of Choose Pharmacy on the number of GP-prescriptions for each of the prescription groups detailed was assessed using the modelling assumptions and the appropriate comparator groups discussed above.

A small reduction in the number of GP appointments and prescription items issued in the pathfinder sites was expected. This was due to the fact that Choose Pharmacy has only been in operation for 12 months and involved 31 pharmacists, combined with the scope of the service (focusing on a limited number of prescription items compared to the wider range of items available in the formulary used by GPs). The significance of any reduction in demand for GP consultations was also expected to be limited due to relatively small population sizes of the Choose Pharmacy pathfinder sites.

As was expected, the DiD analysis provided limited evidence of a significant impact on the number of GP prescriptions (0)[21].

Nonetheless, The DiD analysis revealed a small reduction in the number of GP prescriptions in both pathfinder areas following the introduction of the service, compared with the 'rest of Betsi' and 'Merthyr Tydfil'[22], and when the analysis was undertaken on the prescription group that included all items covered in the full Choose Pharmacy formulary. The subsequent analysis of the impact of Choose Pharmacy has therefore been undertaken using the findings from the DiD analysis of these two scenarios.

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[21] Detailed analysis is presented in Annex 6

[22] These areas 'trended' together with their respective pathfinder site and were therefore considered to be more appropriate comparator areas for the analysis.

Table 6.3 Summary of the DiD analysis of the impact of Choose Pharmacy on the number of GP-prescriptions by prescription groups and pathfinder area

Categories	Summary of findings
GP prescriptions for all items in the Choose Pharmacy formulary	■ DiD analysis of GP prescriptions issued in Betsi compared with the 'rest of Betsi' suggest a slight decrease in GP prescriptions following the introduction of Choose pharmacy. However, the results are not statistically significant. ■ DiD analysis of GP prescriptions issued in Cwm Taf compared with Merthyr Tydfil suggest small but statistically significant decrease in GP prescriptions following the introduction of Choose pharmacy.
GP prescriptions for items in the Choose Pharmacy formulary for which there is a one-to-one indication	■ No statistically significant change in GP prescriptions observed.
GP prescriptions for hay fever treatment	■ No statistically significant change in GP prescriptions observed.
GP prescriptions for conjunctivitis treatment	■ No statistically significant change in GP prescriptions observed. ■ DiD analysis of GP prescriptions issued in Betsi Cadwaladr compared with the 'rest of Betsi' suggest a small but statistically insignificant increase in GP prescriptions ■ The results for Cwm Taf suggest a small but statistically insignificant decrease in GP prescriptions
GP prescriptions for head lice and scabies treatment	■ Small statistically significant changes observed in Cwm Taf but the direction varies depending on the whether a linear or probit model is used. ■ No statistically significant change in GP prescriptions in Betsi Cadwaladr.
GP prescriptions for vaginal thrush treatment	■ No statistically significant change in GP prescriptions observed.

6.3.2 *Indicative reduction in the number of GP prescriptions for common ailments following the introduction of Choose Pharmacy*

The DiD coefficients presented in Table 6.4 have been used to illustrate the probable number of GP appointments and prescription items that could be prevented in the two pathfinder areas. Specifically, the number of GP appointments has been calculated by multiplying the DiD coefficient by the population size of the pathfinder site. However, it is important to note that

this does not represent the true effects of Choose Pharmacy, as the effect has not been proved robustly.

Table 6.4   DiD coefficients for the change in GP prescriptions for all Choose Pharmacy formulary items

	DiD co-efficient (95% confidence intervals)	
Model / comparator group	Betsi to Rest of Betsi	Cwm Taf (Cynon) to Merthyr Tydfil
Linear probability model[23] (Aug – Aug)	-0.001 (-0.004 to 0.003)	-0.010 (-0.017 to -0.002)

Three scenarios have been presented depending on the DiD coefficients used:

- **Scenario 1:** Using the DiD coefficient derived from the comparison of Betsi (Arfon, Dwyfor and Meirionnydd) with the rest of Betsi Cadwaladr, applied to each pathfinder site;
- **Scenario 2:** Using the DiD coefficient derived from the comparison of the Cynon Valley with Merthyr Tydfil; applied to each pathfinder site; and
- **Scenario 3:** Using the DiD co-efficient derived from the comparison of the pathfinder site and its respective comparator group.

Of the three scenarios presented, scenario 3 is the most realistic scenario given that it uses the DiD co-efficient derived from using the most appropriate comparator group for each pathfinder site. Although the two pathfinders have undertaken a similar number of consultations, the observed impact would be expected to be greater in Cwm Taf, because of the relatively smaller population size. The change in the number of GP prescriptions for items included in the Choose Pharmacy formulary are presented in Table 6.5.

Table 6.5 Change in the number of GP prescription items per month for scenario analysis

	Change in number of prescriptions for items included in the Choose Pharmacy formulary (per month)	
	Betsi Cadwaladr	Cwm Taf
Scenario 1	-80	-31
Scenario 2	-1,191	-467
Scenario 3	-80	-467

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[23] The results from the DiD analysis using the Probit Model were insignificant and have therefore not been used in the analysis reported in this section or to assess the costs and benefits of the pathfinders.

6.4 Analysis of changes in demand for GP consultations using SAIL GP consultation data

Supplementary analysis of the change in the number of GP consultations was also undertaken using data from the SAIL database of GP events between 2012 and 2014, for both pathfinder and comparator sites. This was used to assess the impact of Choose Pharmacy on the number of GP consultations. All GP practices in Wales are invited to participate in the SAIL system, but the provision of anonymised data (at both the patient and practice level) is optional. Therefore, the coverage of the SAIL data varies across different localities in Wales. In total, data from 199 GP practices within pathfinder and comparator areas were included in the SAIL system. Post 2011 data was available for 98 of these practices (Table 6.6)[24].

Table 6.6 Summary of the SAIL data entries

Entry	
Total number of GP practices for pathfinder sites and comparator areas	**199**
Betsi Cadwaladr (Arfon, Dwyfor and Meirionnydd)	18
Comparator: rest of Betsi Cadwaladr	41
Comparator: Hywel Dda	32
Cwm Taf (Cynon Valley)	4
Comparator: Merthyr Tydfil	2
Comparator: South Rhondda	0
Number of GP practices with post 2011 data	**98**
Total number of data entries after 2011 in the pilot sites and comparator areas	**131,586,949**

SAIL database (2011 – 14)

6.4.2 Data cleansing exercise

A data cleaning process was carried out on the GP Entry data for the 98 practices in scope for the analysis to remove duplicate entries for each GP consultation and entries containing missing data. This cleaning process included:

■ Removing data entries where the individual patient ID was missing;

■ Removing patients who were non-resident in Wales;

■ Removing multiple 'same day entries' for an individual – assuming that all entries for a single individual relate to the same consultation; and

■ Removing data from practices where complete data was unavailable for the time period of interest (2012 – 2014) (for example where the data

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[24] A single patient consultation will typically give rise to multiple 'events' or entries within the SAIL with each entry reflecting the different aspects of the GP consultation. One entry does not necessarily equate to one consultation, and the number of consultations undertaken across the 98 practices will be lower than the number of data entries presented in Table 7.6.

was missing for a specific year, or where data between years was markedly different, indicating data from a particular year was incomplete).

The cleaned data was then matched to the SAIL[25] dataset of individuals registered to each GP practice included within the SAIL system. This matching exercise ensured that the data sample analysed included only those individuals that were registered with a pathfinder or comparator area GP practice that had provided data to the SAIL system.

This cleaning and matching process reduced the number of GP practices with 'usable data', as well as the number of individual consultations. The number of individuals registered to GP practices, the number of GP practices and individual consultations in each area is presented in Table 6.7.

The SAIL database included a field which provided information from the notes taken by the GP. This field was analysed to identify consultations that related to conditions covered by Choose Pharmacy. The total number of individual consultations relating to common ailments is presented Table 6.7.

Table 6.7 Number of GP practices and individual GP consultations by area

	Number of patients registered	Number of GP practices	Individual consultations	Consultations relating to common ailments
Betsi Cadwaladr pilot site	88,841	14	3,155,687	221,375
Betsi Cadwaladr (non-pilot sites)	313,356	40	12,546,811	930,860
Cwm Taf pilot site	21,519	4	756,811	66,171
Cwm Taf (non-pilot site)	0	0	0	0
Hywel Dda	122,717	16	4,821,085	354,916
Merthyr Tydfil	18,384	2	692,779	63,822

SAIL database

The small sample size of Cwm Taf and Merthyr Tydfil GP practices and associated GP consultations included within the SAIL database precluded further analysis. The small sample size would render any results biased – the results would be skewed towards the experiences of a few GP practices and would not necessarily reflect the experiences of the pathfinder area as a whole.

6.4.3 Analysis of impact of Choose Pharmacy on GP consultations in Betsi Cadwaladr

The DiD model used for the analysis of the SAIL data varied slightly to that used for the GP prescription data. Firstly, SAIL data is available at an

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[25] The sail0294v.ar_pers_gp dataset comprises a list of individuals registered to GP practices, and a history of registrations with GP practices.

individual patient level. Therefore, it is possible to model the total number of GP consultations a patient had over a specified period. In contrast, the prescription data is not available at an individual level. It was therefore necessary to make assumptions about the proportion of the population that did or did not undertake a consultation with a GP.

Secondly, the model has been run over two three month periods – June to August 2013 and 2014; and August to October 2013 and 2014. The monthly variation in prescription data prevented a similar analysis from being undertaken. The two time points were selected to exclude the peak in demand for Choose Pharmacy for hay fever consultations.

With the exception of these two variations, the modelling is the same as the linear probability model specified in 6.1.4. The Probit model was not appropriate as this modelling approach is only appropriate when there is a binary outcomes (i.e. '0' or '1').

The analysis has been carried out using both the total GP consultation data and the data which has been filtered for Choose Pharmacy specific conditions. The results from the models are presented in Table 6.8 below.

Table 6.8 DiD coefficients for the change in GP consultations for all Choose Pharmacy formulary items

Model / comparator group	DiD co-efficient (95% confidence intervals)	
	Betsi to Rest of Betsi	Betsi to Hywel Dda
1.Linear model total consultations (Jun - Aug)	-0.017 (-0.063 to 0.029)	0.194 (0.139 to 0.249)
2. Linear model total consultations (Aug - Sep)	-0.058 (-0.106 to -0.009)	0.028 (-0.031 to 0.086)
3. Linear model common ailment consultations (Jun - Aug)	-0.001 (-0.011 to 0.010)	-0.002 (-0.014 to 0.011)
4. Linear model common ailment consultations (Aug - Oct)	-0.005 (-0.016 to 0.006)	-0.008 (-0.021 to 0.005)

The coefficients presented in Table 6.8 show that the analysis indicates that there is a small decrease in the average number of consultations per patient in Betsi Cadwaladr following the introduction of the Choose Pharmacy Pathfinder. The analysis assessing the number of consultations for common ailments only (rather than for total consultations – see (3) and (4) in Table 6.8) are expected to be a more accurate reflection of the impact of Choose Pharmacy. Furthermore, the higher DiD coefficients derived when Betsi is compared with Hywel Dda suggest that people in the Betsi comparator group are less likely to go to their GP for common ailments than people in Hywel Dda.

As would be expected given the small sample size of the pathfinder areas, the observed decrease is not statistically significant. This means that it cannot be ruled out that the decline in the number of GP consultations could

have been caused by random variation of factors influencing the number of GP consultations rather than by a systematic impact of Choose Pharmacy.

6.5 Comparison of findings from the SAIL and GP prescription data analysis

The impact observed following the analysis of the SAIL data is consistent with that observed using the GP prescription data. The central estimate from the prescription analysis (using the rest of Betsi Cadwaladr as a comparator group) suggested a decrease of 80 GP consultations per month. If the results from the SAIL data models are extrapolated to the same population as used for the prescription data analysis[26], the decrease in GP consultations is estimated to be 123 over three months (41 consultations per month) using the June to August model, and 614 (203 per month) using the August to October model. This suggests that the results from the analysis of the prescription data and the results from the SAIL data analysis are broadly in agreement with each other. Therefore, it seems likely that the results of the models using prescription data from Cwm Taf represents the true effect in the pilot site.

The analysis of the total costs and benefits has been carried out using the information from the analysis of the prescription data. This is because the coverage of the SAIL data is incomplete as no analysis could be carried out for the Cwm Taf pathfinder site.

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[26] The population in the SAIL data is smaller than that in the prescription analysis. This is because there is not information for all GP practices in the pilot site on the SAIL database. Therefore, in order to compare the results from the prescription and SAIL data models, the same population size has to be used.

7 Economic impact

The analysis of the economic impact of Choose Pharmacy is presented within this section. It shows the costs and benefits associated with the programme to the health service and wider society. There is a degree of uncertainty associated with estimating the benefits of Choose Pharmacy – in particular the extent of the impact reported in section 6. However, there is more certainty around the nature and scale of the costs of Choose Pharmacy. Therefore, the discussion of benefits should be viewed as indicative scenarios of the potential impact of Choose Pharmacy rather than a conclusive discussion. A discussion of how many GP appointments and prescription items need to be prevented to demonstrate a positive return on investment is also presented. The analysis represents an examination of the total costs of providing Choose Pharmacy and an assessment of those benefits that the evaluation has been able to estimate. It does not present a comparative cost analysis between treating the common ailments at the pharmacy or GP.

7.1 Cost of the programme

The costs associated with the Choose Pharmacy programme can be split between fixed costs and variable costs. The fixed costs are the central management costs, maintaining the eCAS system and payment to pharmacies for taking part in the programme. The variable costs are the costs to pharmacies for providing consultations, the costs to users and employers from attending GP and pharmacist appointments, and the cost of prescribing items.

7.1.1 Fixed costs

The fixed costs associated with Choose Pharmacy are:

- The cost of paying pharmacists to deliver the service, to cover their set up and training costs;
- The cost of setting up and maintaining the eCAS system for the programme, which is managed by NHS Wales Information Service (NWIS); and
- The cost of managing the programme within the pathfinder sites.

The Management Information from the programme provided the data for the fixed costs:

- The payments to pharmacies were structured as follows:
    - £2,340 for pharmacies with 1 – 200 registrations;
    - £3,040 for pharmacists with 201 – 300 registrations;
    - £3,740 for pharmacists with 301 – 400 registrations; and
    - £7 per patient for pharmacists with 401+ registrations.
- All participating pharmacies received a payment of £660 for taking part in the pilot programme. This cost has been included as part of the cost of the pathfinder but excluded from the costs and benefits of the roll out.
- The value of the contract held with NWIS for setting up and maintaining the eCAS system was worth £300,000, paid to NWIS at the beginning

of the programme. There was an additional £1,000 payment to each pharmacy to set up the system; and

■ A one-off payment of £60,000 to the LHBs for facilitator costs/local engagement.

These costs all come from management information, and are not subject to assumptions or uncertainty. The fixed costs of the programme for the first year are presented in Table 7.1. The payment to pharmacists is based on 31 pharmacists taking part in the programme, with 13 in Cwm Taf and 18 in Betsi Cadwaladr. All of the pharmacists had achieved fewer than 201 recruitments; therefore all pharmacists received a payment of £2,340 and a payment of £660 for taking part in the pilot.

Table 7.1 Fixed costs of Choose Pharmacy in Year 0

	Central costs	Cost in Betsi Cadwaladr	Cost in Cwm Taf	Total cost
Payment to pharmacists for participating in pilot	-	£11,900	£8,600	£20,500
Payment to pharmacies per registration	-	£42,100	£30,400	£72,500
Payment for eCAS	£300,000	£18,000	£13,000	£331,000
Payment for LHB area lead	-	£60,000	£60,000	£120,000
Total cost	**£300,000**	**£132,000**	**£112,000**	**£544,000**

7.1.2   Variable costs

The variable costs of the Choose Pharmacy are dependent on the number of appointments which take place, and the number of prescription items dispensed. The costs to the health service are the costs of providing the pharmacist appointment and the cost of the prescribed item. There are additional costs to the users of the service of the time they spend travelling to and from the Choose Pharmacy appointments and the time they spend waiting for and having the appointment. The following data sources and assumptions have been used to calculate the variable costs:

■ The eCAS data records the number of appointments, which was 1,765 in the first year (up to end of August 2014). This has been multiplied by a cost per appointment for community pharmacists, taken from the unit cost of health and social care 2014, by the Personal Social Services Research Unit at the University of Kent and the London School of Economics. The cost of a community pharmacy appointment is assumed to be £5.[27]

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[27] This is based on the hourly value of community pharmacist time for direct clinical activities (£128 per hour).

- The eCAS data provides information on the items which have been prescribed through Choose Pharmacy (2,473 in the first year to the end of August 2014). This, coupled with the Management Information of the prices charged for prescription items allows an accurate calculation of the cost of prescribed items.

- The costs to individuals is based on the fact that people spend time travelling to, waiting for, having and travelling back from appointments. This is an opportunity cost for the individual – time which they would have spent carrying out other activities if they did not have to attend the pharmacist. The costs for this have been estimated using the following:

  - The value of an individual's time is £10 per hour, which is taken from a meta-analysis of studies valuing time for the UK Department of Transport[28];
  - The average length of time a person spends travelling to the pharmacist is assumed to be the same as the travel time to the GP, due to the location of the participating pharmacists and GPs. This is taken from the GP cluster data, produced by the Public Health Wales Observatory in 2012 (8 minutes and two seconds in Betsi Cadwaladr and 6 minutes 42 seconds in Cwm Taf);
  - The duration of a consultation through Choose Pharmacy is taken from eCAS data, and is assumed to be two minutes 27 seconds. This average consultation duration is taken from the time a pharmacist logs onto the eCAS system at the start of the consultation to when the pharmacist logs out of the system. The assumption is also likely to underestimate the costs in patients' time in instances when the patient is referred back the GP practice;
  - There is no literature on the duration of time spent waiting for a Pharmacy appointment, but given the average length of a Choose Pharmacy appointment it is assumed to be relatively low. For modelling purposes, it has been set at the same time as the median duration of a Choose Pharmacy appointment of 2 minutes and 27 seconds; and
  - The average length of time an individual spends travelling to and from, waiting for and having their pharmacist consultation has been multiplied by the number of Choose Pharmacy appointments and the value of an individual's time.

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[28] Arup and ITS (2014) Meta-Analysis Of Post-1994 Values Of Non-Work Travel Time Savings

Table 7.2 Variable costs of Choose Pharmacy in Year 0

	Cost in Betsi Cadwaladr	Cost in Cwm Taf	Total cost
Costs to the Health service			
Cost of pharmacist providing appointment	£4,700	£4,800	£9,400
Cost of prescribed items	£2,900	£3,000	£6,000
Total cost to the Health Service	£7,600	£7,800	£15,400
Costs to patients and users			
Cost of waiting for pharmacist appointment	£400	£400	£700
Cost of time for pharmacist appointment	£400	£400	£700
Cost of traveling to and from pharmacist appointment	£2,400	£2,000	£4,400
Total cost to service users	£3,100	£2,800	£5,900
Total costs	**£10,700**	**£10,600**	**£21,300**

7.1.3 Total Costs

Summing the fixed and variable costs provides the total cost of the programme in the first fourteen months of implementation. Table 7.3 presents the total cost of Choose Pharmacy.

Table 7.3 Total cost of Choose Pharmacy in Year 0

Agent	Cost
Health Service	£559,400
Service users	£5,900
Total	**£565,300**

7.2 Benefits of Choose Pharmacy

There is a degree of uncertainty associated with estimating the benefits of Choose Pharmacy – in particular the extent of the impact reported in section 7.1. Therefore, scenario analysis has been used to model the benefits of the pathfinders, specifically, using the three scenarios for the reduction in the number of GP prescriptions presented in section 6.3.2. It is important to note that this does not represent the true effects of Choose Pharmacy as the effect has not been proved robustly.

The following data sources, assumptions and calculations have been used in this scenario analysis:

- The number of prescriptions issued equals the number of GP consultations carried out (in the absence of GP consultation data for both pathfinder sites);
- The cost of a GP appointment is £35, based on evidence from the unit cost of health and social care 2014 (PSSRU); the total value of GP appointments avoided is calculated by multiplying the cost of a GP appointment by the number of GP appointments avoided;
- The total value of prescription items not issued by GPs is calculated by multiplying the number of prescription items no longer issued by the average cost of a prescription item issued by GPs (£2.66; prescription data);
- The duration of a GP appointment is 12 minutes (PSSRU);
- The duration of time spent waiting at the GP surgery for an appointment is captured in the GP surgery in England, but is not included in the Welsh Health survey. Therefore, the average duration from England of 12 minutes has been used as a proxy measure[29];
- The time spent waiting to collect a prescription item is assumed to be two minutes and 27 seconds;
- The value of a person's time is as described in section 7.1.2 above;
- The travel times are as described in section 7.1.2 above; and
- The total value of patients' time savings is calculated by multiplying the average time a patient is travelling to and from, waiting for and having a GP appointment by the value of time and the total number of GP appointments avoided.

These assumptions and calculations provide estimates of the benefits of introducing associated with Choose Pharmacy presented in Table 7.4.

Table 7.4 Scenario analysis of introducing Choose Pharmacy, potential monthly savings year 0

	Scenario 1	Scenario 2	Scenario 3
BC GP appointment saving	£2,800	£41,700	£2,800
BC Prescription items saving	£200	£3,000	£200
BC patient time savings	£600	8,600	£600
CT GP appointment saving	£1,100	16,300	£16,300
CT Prescription items saving	£100	1,200	£1,200
CT patient time savings	£200	3,200	£3,200
Total Saving	**£5,000**	**£74,000**	**£24,300**

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[29] NHS England (2014) GP patient survey, England

7.2.2 Projection of costs and benefits

Assuming that the true impact of the project is measured in each of those scenarios, the monthly savings can be extended into the future, to demonstrate the future impact and costs of the project. The change in the proportion of people attending their GP and receiving prescriptions due to the operation of Choose Pharmacy has been held constant in each of the scenarios, assuming that the models for August 2013 to August 2014 reflect the true impact of the project. Therefore, the number of GP appointments avoided increases slightly due to anticipated population growth in the pathfinder sites.

The monetary value for each cost has been held constant for the five years as well, and this assumes that:

- The payment to pharmacists remains unchanged;
- The average number of Choose Pharmacy appointments per population per month increases by an additional 2.5 per cent each year (having been set at 240 per month for year 1); and
- The average number of prescription items issued per population per month increases by an additional 2.5 per cent each year (having been set at 330 per month for year 1);

Using these assumptions, and discounting future values in line with the UK Government's guidance in the green book, the results are displayed in Table 7.5 to Table 7.8.

Table 7.5 Costs of the Choose Pharmacy (£)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total NPV
Cost of eCAS set up	£300,000	£0	£0	£0	£0	£0	£300,000
Cost of eCAS set up at pharmacies	£31,000	£0	£0	£0	£0	£0	£31,000
Payment to LHB	£120,000	£0	£0	£0	£0	£0	£120,000
Payment to pharmacists	£93,000	£70,100	£67,700	£65,400	£63,200	£61,100	£420,500
Cost of appointments	£9,400	£14,800	£14,800	£14,700	£14,600	£14,500	£82,800
Cost of prescription item issued	£6,000	£9,800	£9,700	£9,700	£9,600	£9,500	£54,300
Cost of travel time	£5,900	£9,400	£9,300	£9,300	£9,200	£9,200	£52,300
Total	**£565,300**	**£104,100**	**£101,500**	**£99,000**	**£96,600**	**£94,400**	**£1,060,900**

Table 7.6 Savings from the Choose Pharmacy under scenario 1 (£)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total NPV
GP appointments	£11,700	£45,000	£43,500	£42,800	£41,400	£40,300	£224,700
GP prescribed items	£900	£3,400	£3,300	£3,300	£3,100	£3,100	£17,100
Patient time	£2,400	£9,100	£8,800	£8,700	£8,400	£8,200	£45,500
Total Savings	**£14,900**	**£57,600**	**£55,700**	**£54,700**	**£52,900**	**£51,500**	**£287,300**

Table 7.7 Savings from the Choose Pharmacy under scenario 2 (£)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total NPV
GP appointments	£174,100	£672,800	£652,800	£633,700	£615,200	£597,300	£3,346,000
GP prescribed items	£13,200	£51,100	£49,600	£48,200	£46,800	£45,400	£254,300
Patient time	£35,300	£136,400	£132,300	£128,400	£124,600	£120,900	£677,900
Total Benefit	**£222,600**	**£860,400**	**£834,700**	**£810,300**	**£786,600**	**£763,600**	**£4,278,200**

Table 7.8 Savings from Choose Pharmacy under scenario 3 (£)

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total NPV
GP appointments	£57,400	£222,000	£215,200	£209,100	£202,800	£197,000	£1,103,500
GP prescribed items	£4,400	£16,900	£16,400	£15,900	£15,400	£15,000	£83,900
Patient time	£11,200	£43,400	£42,000	£40,800	£39,500	£38,300	£215,100
Total Benefit	**£73,000**	**£282,200**	**£273,600**	**£265,700**	**£257,600**	**£250,200**	**£1,402,400**

These tables show that under scenario 1, the savings generated from the introduction of the Choose Pharmacy fall below the costs of the service. Further, the annual savings are less than the annual costs of the programme, meaning that under this scenario the service will never break even or report a positive return on investment.

Under scenario 2, with a one percentage point decrease in the proportion of the population attending their GP each month, the service would report a positive return on investment in year 1, and the annual savings in future years would continue to be higher than the annual costs.

Under scenario 3, the Choose Pharmacy service would report a positive return on investment by year three. However, this is due to the initial costs involved with setting the project up – in particular the costs of the setting up the eCAS system. Specifically it assumes that the costs of the eCAS system are covered entirely by the pathfinder, despite other localities benefiting from the system should the service be rolled out further. The future annual savings

would be higher than the annual costs of providing the Choose Pharmacy. This is presented graphically in Figure 7.1.

Figure 7.1   Return on Investment of Choose Pharmacy (showing cumulative Present Value)
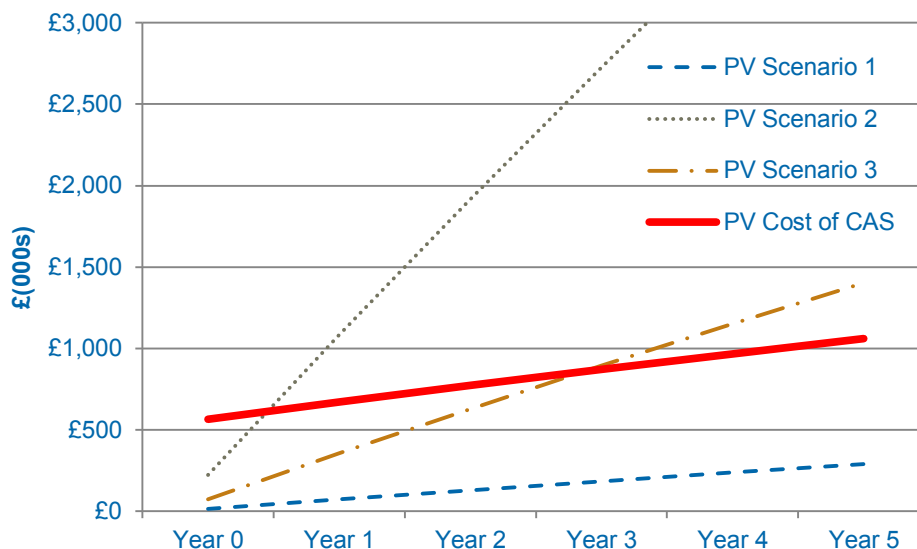
In order for Choose Pharmacy to "break even" over five years the proportion of people attending their GP and receiving a prescription would need to decrease by a minimum 0.25 percentage points in each pathfinder site (see Figure 7.2). This equates to a total decrease of 427 GP appointments per month across the two pathfinder sites in the first year. This assumes that the level of provision from pharmacies remains at a constant rate, and the impact of the service is the same in both pathfinder sites (see Figure 7.2). While the estimated total decrease in GP appointments required to break even is less that the current demand for the service, it is important to note, the required decrease in GP appointments does not necessarily require a corresponding increase in demand for Choose Pharmacy. For example, the promotion of self-management of conditions by the service could reduce the number of GP appointments without a corresponding Choose Pharmacy appointment.

As noted above, the presented 'break even' reduction in GP appointments assumes that the total cost of the eCAS computer system developed is covered by the two pathfinder sites. Given that this is a pilot programme prior to a national roll out, it is unlikely that the cost of the eCAS system is borne entirely by the two pathfinder sites. If only a proportion of the cost of developing the eCAS system is covered by pathfinders, the number of GP appointments needed to break even would be significantly lower. There is uncertainty regarding the frequency of maintaining and updating the eCAS system, such costs have therefore been excluded from the analysis.

Finally the analysis assumes that only one prescription item is issued per GP appointment, whereas GPs are likely to issue more than one item per appointment in some instances. If GPs issue more than a single prescription item per appointment, the break-even point will be reduced.

Figure 7.2　　Break-even level for Choose Pharmacy
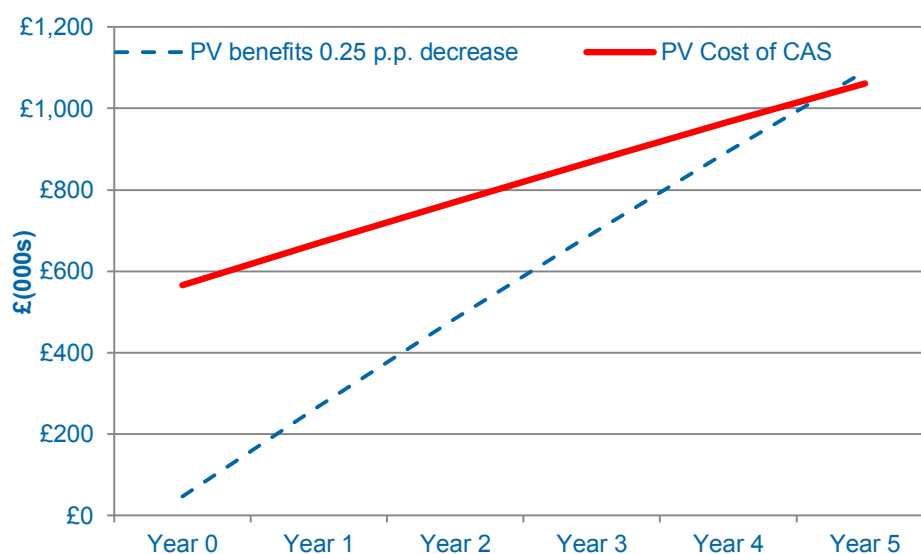
7.2.3　Sensitivity analysis

There is a degree of uncertainty around the impact of Choose Pharmacy and the costs and benefits associated with the programme. Therefore sensitivity analysis was carried out on the findings of the costs and benefits, to find a lower and upper bound for the values. The sensitivity analysis varied the assumptions which were used to calculate the costs and benefits. Table 7.9 presents the assumptions that have been varied for the sensitivity analysis, and the sources on which the assumptions are based.

Table 7.9 Assumptions used in the sensitivity analysis

Variable	Low estimate		Best estimate		High estimate	
	Value	Evidence	Value	Evidence	Value	Evidence
Change in number of GP appointments in Betsi Cadwaladr (and prescriptions) (used in scenarios 1 and 3)	0	Lower estimate of the Confidence Interval	0.001	Central estimate	0.004	Higher estimate of the Confidence Interval
Change in number of GP appointments in Cwm Taf (and prescriptions) (used in scenario 2 and 3)	0.002	Lower estimate of the Confidence Interval	0.010	Central estimate	0.017	Higher estimate of the Confidence Interval
Cost of a GP appointment	£35	PSSRU cost of a GP appointment	£35	PSSRU cost of a GP appointment	£56	PSSRU cost of a GP appointment (for a 17 minute GP appointment)
Cost of a pharmacist appointment	£5.33	PSSRU cost for an appointment lasting 2 minutes 27 seconds	£5.33	PSSRU cost for an appointment lasting 2 minutes 27 seconds	£18.89	PSSRU cost for an appointment lasting 7 minutes 59 seconds
Duration of a GP appointment	12 minutes	PSSRU	12 minutes	PSSRU	17 minutes	PSSRU
Duration of a Choose Pharmacy appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	7 minutes 59 seconds	Based on the 3rd quartile duration of an eCAS appointment
Cost of a GP prescription item	£1.44	1st quartile value of prescription item from eCAS data	£2.66	Median value of prescription item from eCAS data	£2.91	Third quartile value of prescription item from eCAS data
Cost of a Choose Pharmacy prescription item	£1.28	1st quartile value of prescription item from GP prescription data	£2.41	Median value of prescription item from GP prescription data	£2.42	Third quartile value of prescription item from GP prescription data
Increase in Choose Pharmacy appointments and prescriptions per year	0%	Assumes no growth in appointments and prescriptions	Additional 2.5% per year	Assumes a limited growth in appointments and prescriptions	Additional 5% per year	Assumes a modest growth appointments and prescriptions

Variable	Low estimate		Best estimate		High estimate	
	Value	**Evidence**	**Value**	**Evidence**	**Value**	**Evidence**
Travel time to GP and pharmacy	As in GP cluster analysis	GP cluster analysis	As in GP cluster analysis	GP cluster analysis	1.5 times GP cluster analysis	GP cluster analysis
Waiting time in GP surgery	12 minutes	English GP survey results	12 minutes	English GP survey results	18 minutes	1.5 times value from English GP survey results
Waiting time for Choose Pharmacy appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	7 minutes 59 seconds	Based on the 3rd quartile duration of an eCAS appointment
Waiting time for prescription after GP appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	2 minutes 27 seconds	Based on the median duration of an eCAS appointment	7 minutes 59 seconds	Based on the 3rd quartile duration of an eCAS appointment
Number of patients per pharmacy in Betsi Cadwaladr	Under 200 for all pharmacies	Based on eCAS data	Under 200 for all pharmacies	Based on eCAS data	94% under 200 in Y2; 89% under 200 for Y3 onwards	Based on eCAS data with growth in the number of registered patients
Number of patients per pharmacy in Cwm Taf	Under 200 for all pharmacies	Based on eCAS data	Under 200 for all pharmacies	Based on eCAS data	92% under 200 in Y2; 77% under 200 for Y3 onwards	Based on eCAS data with growth in the number of registered patients

Using the range of assumptions detailed in Table 7.9, high and low estimates for the costs and potential benefits of Choose Pharmacy can be presented alongside the best estimates. The results from the sensitivity analysis are presented in Table 7.10 to Table 7.13 below.

Table 7.10 Sensitivity analysis of the present values of the cost of Choose Pharmacy (£)

Type of cost	Low estimate	Best estimate	High estimate
Cost of eCAS set up	£300,000	£300,000	£300,000
Cost of eCAS set up at pharmacies	£31,000	£31,000	£31,000
Payment to LHB	£120,000	£120,000	£120,000
Payment to pharmacists	£420,500	£420,500	£431,000
Cost of appointments	£79,400	£82,800	£305,100
Cost of prescription item issued	£27,700	£54,300	£56,800
Cost of travel time	£50,100	£52,300	£104,800
Total	£1,028,700	£1,060,900	£1,348,700

Table 7.11 Sensitivity analysis of potential benefits of Choose Pharmacy , Scenario 1 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£3,300	£224,700	£2,374,600
GP prescription items avoided	£0	£17,100	£123,400
Patient time	£600	£45,500	£474,300
Total	£3,900	£287,300	£2,972,400

Table 7.12 Sensitivity analysis of potential benefits of Choose Pharmacy, scenario 2 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£691,000	£3,346,000	£9,600,400
GP prescription items avoided	£28,400	£254,300	£498,900
Patient time	£140,000	£677,900	£1,917,600
Total	£859,400	£4,278,200	£12,016,900

Table 7.13 Sensitivity analysis of potential benefits of Choose Pharmacy , Scenario 3 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£194,300	£1,103,500	£4,407,800
GP prescription items avoided	£8,000	£83,900	£229,000
Patient time	£37,500	£215,100	£862,000
Total	£239,800	£1,402,400	£5,498,800

These tables show that there is a relatively small amount of variation in the costs associated with Choose Pharmacy. This is because the majority of the costs associated with the programme are known costs, and therefore do not vary between the low, best and high estimates. The largest costs of the programme (relating to the eCAS system and payment to pharmacies) vary very little.

However, there is considerable variation in the value of the benefits associated with Choose Pharmacy. This is largely driven by the uncertainty of the number of GP appointments and GP prescription items that are prevented by Choose Pharmacy.

7.2.4 Summary of the cost and benefit analysis of the Choose Pharmacy pathfinders

Through the analysis of the impact of Choose Pharmacy, this chapter has presented that:

■ The impact analysis revealed limited statistically significant results. The power of the study to assess impact was limited (i.e. the study's ability to detect a difference, if the difference in reality exists) due to a relatively small sample size – in part due to the fact that the service has only been in operation for 12 months and involved 31 pharmacists. The service also focuses on a limited number of ailments compared to the wider range of ailments for which patients seek advice and treatment from a GP. Therefore the impact of the Choose Pharmacy pathfinders was anticipated to be low, and a statistically significant result would not necessarily be expected.

■ However, four of the six models examining the total number of prescribed items indicated a small decrease in GP-prescribed items covered within the Choose pharmacy formulary as a result of the introduction of Choose Pharmacy. Two of these were statistically significant and represented up to a one percentage point reduction in the demand for GP appointments in the pathfinder areas. Furthermore, the effect of Choose Pharmacy appears to have increased over time. This appears to be logical, given that there were relatively few individuals registered for Choose Pharmacy in the first few months of the programme, but then this increased over time.

■ Given uncertainty associated with estimating the benefits of Choose Pharmacy – in particular the extent of the impact, scenario analysis has been undertaken to estimate the impact of the pathfinders on the number of GP consultations, and examine the benefits associated with the Choose Pharmacy service. The number of GP appointments avoided per month across both pathfinder sites range between 111 and 1,658 per month (with 547 appointments being the most realistic estimate). The savings associated with these avoided GP appointments ranges from £287,300 to £4,278,200 (with £1,402,400 being the most realistic saving associated with the GP appointments avoided).

- There is good information on the costs associated with providing the Choose Pharmacy service. The cost of providing Choose Pharmacy from September 2013 to August 2014 was around £565,000, with most of this cost relating to the provision of the eCAS system. This cost includes the total cost of the computer system developed for the Choose Pharmacy programme, which is valued at £300,000. It has not been possible to estimate any future development or maintenance costs for the computer system. If the programme is rolled out nationally, it may not be appropriate to assign the full cost of the developing computer system to the pathfinder sites.

- In order for Choose Pharmacy to provide a positive return on investment over the next five years, a reduction of 0.25 percentage points is required in the proportion of people attending the GP and receiving prescription items in both pathfinder sites. This equates to a total decrease of 427 GP appointments and prescription items per month (across both pathfinder sites) in the first year. This is subject to the following caveats:

  - While the estimated total decrease in GP appointments required to break even is less than the current demand for the service, it is important to note, the required decrease in GP appointments does not necessarily require a corresponding increase in demand for Choose Pharmacy. For example, the promotion of self-management of conditions by the service could reduce the number of GP appointments without a corresponding Choose Pharmacy appointment.
  - The analysis assumes that the total cost of developing the eCAS computer system is covered by the two pathfinder sites. Given that this is a pilot programme prior to a national roll out, it is unlikely that the cost of the eCAS system is borne entirely by the two pathfinder sites. If only a proportion of the cost of developing the eCAS system is covered by pathfinders, the number of GP appointments needed to break even would be significantly lower. There is uncertainty regarding the frequency of maintaining and updating the eCAS system, such costs have therefore been excluded from the analysis.
  - Finally the analysis assumes that that only one prescription item is issued per GP appointment, whereas GPs are likely to issue more than one item per appointment in some instances. If GPs issue more than a single prescription item per appointment, the break-even point will be reduced.
- The sensitivity analysis has also be undertaken in which the following costs and benefits were varied:
  - the costs associated with GP appointments;
  - the impact of the programme on GP appointments;
  - the cost of prescription items;
  - the travel time for patients travelling to GP appointments;
  - the waiting times and duration of appointments; and
  - the growth rate of GP and Choose Pharmacy appointments.

- The sensitivity analysis shows that there is far less uncertainty around the true cost of the Choose Pharmacy than the potential benefits resulting from the programme. This is due to a large proportion of the costs being known rather than estimated and the potential effect of the programme on GP appointments and prescription items being highly uncertain.
- Under the low estimate assumptions, none of the scenarios would cover the costs of the pilot, however under the higher estimates the benefits in all scenarios are higher than the costs.

7.3   Roll out of the Choose Pharmacy Service

The potential costs and benefits of a national roll out of Choose Pharmacy have been considered. To assess the roll out, each GP cluster in Wales was analysed to see if it was most closely aligned to the pathfinder site in Betsi Cadwaladr or Cwm Taf. This analysis was based on:

- Age;
- Deprivation categories;
- Drivetime bands;
- Rural/urban classification; and
- Burden of disease for five diseases (Hypertension, Asthma, Diabetes; CHD; and COPD).

Each GP cluster was then assigned as most closely matched to either the Betsi Cadwaladr site or the Cwm Taf site. This was done in order to estimate:

- The potential number of pharmacies that would deliver Choose Pharmacy in each cluster;
- The estimated number of appointments and prescription items that would be issued through the service in each cluster; and
- The estimated number of GP appointments and prescriptions that would be avoided due to Choose Pharmacy in each cluster.

As the analysis of roll out costs and benefits was carried out by cluster area, the average travel time to and from appointments could be varied, allowing a more accurate estimate of the costs associated with travelling.

The calculation of the roll out costs and benefits was undertaken as follows:

- If the GP cluster was most closely matched to Betsi Cadwaladr, the number of pharmacies participating in the programme in Betsi Cadwaladr was divided by the population, and then multiplied by the population in the GP cluster in order to estimate the number of pharmacies participating in the cluster. If the cluster was more closely matched to Cwm Taf, then the same calculation was carried out using pharmacies participating in Cwm Taf.

- The number of pharmacies participating in Choose Pharmacy was multiplied by the fee paid to pharmacists and the fee for setting up the eCAS system in the pharmacy premises.

- The number of Choose Pharmacy appointments and prescriptions was divided by the population in the pathfinder sites, and the most appropriate ratio was applied to the population in each cluster to estimate

the potential number of Choose Pharmacy appointments and prescriptions issued in each cluster.

■ The number of Choose Pharmacy appointments and prescription items issued in each cluster has been multiplied by the values for the Choose Pharmacy prescriptions items and appointments presented in section 7.

■ The percentage point change in the number of GP appointments avoided have been applied to the population in each cluster to estimate the potential benefits of Choose Pharmacy.

The roll out costs did not include any costs for setting up the eCAS system, as this has already been developed. It does not include a payment to the LHB either. Finally, it does not include the payment to pharmacies to take part in the pilot (£660).

Table 7.14 presents the potential costs of the roll out of Choose pharmacy assuming that there are 541 pharmacies deliver the service. The largest cost is the payment to pharmacists for registering patients.

Table 7.14   Potential costs of the roll out of Choose Pharmacy, present value of costs over 5 years

Type of cost	Cost
Number of pharmacies participating	541
Cost of eCAS set up	£0
Cost of eCAS set up at pharmacies	£541,000
Payment to LHB	£0
Payment to pharmacists	£6,981,700
Cost of appointments	£1,571,400
Cost of prescription item issued	£1,027,800
Cost of travel time	£948,500
Total	**£11,070,400**

The potential benefits from the roll out, using the same scenarios as outlined in section 7.2 are presented in Table 7.15 to Table 7.17. This shows that in scenario 1, with a low level of GP appointments and prescription items avoided due to the introduction of Choose Pharmacy, the cost of the programme is larger than the benefits generated. This is the same as for the pilot sites. However, as with the pilot sites, both scenario 2 and scenario 3 show that the benefits outweigh the costs of the programme. It seems likely that scenario three is the most realistic scenario.

Table 7.15 Present value of potential roll out benefits of Choose Pharmacy over 5 years, Scenario 1 (£)

Type of benefit	Benefits
GP appointments avoided	£3,929,600
GP prescription items avoided	£298,700
Patient time	£776,600
Total	£5,004,900

Table 7.16 Present value of potential roll out benefits of Choose Pharmacy over 5 years, Scenario 2 (£)

Type of benefit	Benefits
GP appointments avoided	£58,498,400
GP prescription items avoided	£4,445,900
Patient time	£11,561,000
Total	£74,505,300

Table 7.17 Present value of potential roll out benefits of Choose Pharmacy over 5 years, Scenario 3 (£)

Type of benefit	Benefits
GP appointments avoided	£33,795,400
GP prescription items avoided	£2,568,500
Patient time	£6,533,300
Total	£42,897,200

7.3.2 Sensitivity analysis of roll out

The sensitivity analysis which was carried out earlier in section 7 has been applied to the roll out of Choose Pharmacy. Two additional assumptions have been varied for the sensitivity analysis of the roll out. These are:

■ The number of pharmacies taking part. Half the number of pharmacies of the best estimate are assumed to deliver Choose Pharmacy in the low estimate (272). For the high estimate the number of pharmacies delivering the service has been multiplied by 1.2 (a total of 651 pharmacies);

■ The number of appointments and prescriptions issued through Choose Pharmacy. For the low estimate, half the number of appointments and prescription items issued through Choose Pharmacy are assumed to take place. For the high estimate the number of Choose Pharmacy appointments and prescription items issued has been multiplied by 1.2; and

■ All the other assumptions highlighted in Table 7.9 have been used for this analysis.

Table 7.18 to Table 7.21 present the results for the sensitivity analysis. As with the sensitivity analysis for the pilot sites, there is more uncertainty around the potential benefits of rolling out Choose Pharmacy than the costs. This again is due to the uncertainty for the number of GP appointments and GP prescription items which are avoided following the introduction of Choose Pharmacy. The largest benefit is due to GP appointments avoided in all scenarios and in all estimates, with the highest cost being the payment to pharmacists for registering patients.

Table 7.18   Sensitivity Analysis of the roll out costs of Choose Pharmacy (£)

	Low estimate	Best estimate	High estimate
Cost of eCAS set up	£0	£0	£0
Cost of eCAS set up at pharmacies	£272,000	£541,000	£651,000
Payment to LHB	£0	£0	£0
Payment to pharmacists	£3,510,200	£6,981,700	£8,655,100
Cost of appointments	£784,700	£1,571,400	£7,296,100
Cost of prescription item issued	£282,300	£1,027,800	£1,352,500
Cost of travel time	£473,600	£948,500	£2,419,700
Total	£5,322,700	£11,070,400	£20,374,400

Table 7.19 Sensitivity analysis of potential benefits of the roll out of Choose Pharmacy, Scenario 1 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£0	£3,929,600	£41,507,000
GP prescription items avoided	£0	£298,700	£2,156,900
Patient time	£0	£776,600	£8,097,000
Total	£0	£5,004,900	£51,760,900

Table 7.20 Sensitivity analysis of potential benefits of the roll out of Choose Pharmacy, Scenario 2 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£12,089,100	£58,498,400	£167,853,800
GP prescription items avoided	£497,400	£4,445,900	£8,722,400
Patient time	£2,389,200	£11,561,000	£32,744,200
Total	£14,975,600	£74,505,300	£209,320,400

Table 7.21 Sensitivity analysis of potential benefits of the roll out of Choose Pharmacy, Scenario 3 (£)

Type of benefit	Low estimate	Best estimate	High estimate
GP appointments avoided	£6,615,000	£33,795,400	£110,649,600
GP prescription items avoided	£272,200	£2,568,500	£5,749,800
Patient time	£1,275,000	£6,533,300	£21,268,900
Total	£8,162,200	£42,897,200	£137,668,400

7.3.3 Summary

The analysis of the potential impact of the roll out of Choose Pharmacy reported within this section reveals:

- National rollout costs of Choose Pharmacy are substantial even in the absence of paying for the development of the eCAS system and paying LHBs, the best estimate of the cost is over £10 million over five years. The majority of this cost is to pay pharmacies for registering patients.

- Despite the large costs, there are large benefits which could be generated by the roll out. The majority of these benefits would be accrued from preventing GP appointments and prescription items.

- Under two of the scenarios analysed, the benefits of national rollout would outweigh the costs. These are the second and third scenarios analysed. Scenario three is most likely to represent the real outcomes of the programme, as in each GP cluster area the impact on GP practices is assumed to be the same size as in the most comparable pilot site.

8 Conclusions, recommendations and next steps

This section sets out the conclusions from the findings presented in the preceding sections. With these conclusions in mind, recommendations are presented to support the continuous improvement of Choose Pharmacy and support the subsequent roll-out of the service.

8.1 Conclusions

The final evaluation findings demonstrate that the Choose Pharmacy Pathfinder service has been well designed and delivered. While stakeholders considered that the delivery of the service has yet to make an impact at scale, many considered that the pathfinders have delivered positive outcomes. Stakeholders expressed positive views about the service; they would welcome the continuation of the service.

Demand has continued to rise as awareness has improved and the service has been embedded. While engagement by pharmacists and GP practices has been variable, there are examples of high activity (with respect to consultations) and effective practice in delivering the service. Lessons learned regarding the conditions for success have been identified, these include:

- GP and pharmacist engagement in the proactive promotion of the service – GP engagement in this respect is particularly important – not only to ensure patients are referred but also to promote patient confidence in the service;
- Existing relationships between pharmacies and GP practices – not only to support awareness raising and to create demand for the service, but also to ensure that challenges and issues can be resolved in a timely and effective manner;
- Pharmacy capacity to deliver a consistent service – including the use of workforce models that enable the pharmacist to focus on delivering services; and
- GP practice understanding of the service to ensure appropriate referrals and existing use of a triage system – in this respect, a focus, in the first instance on those common ailments most frequently presented by patients has been identified as being particularly effective in helping to establish the service.

Support provided by the LHBs has continued to be pivotal to the operation and continuous improvement of Choose Pharmacy. In particular, the Local Health Boards have helped to sustain momentum, facilitate relationship building across the pathfinder areas and have supported pharmacists and GPs as they have begun to engage with the service over the last six months.

Consistent with the interim findings, the success of the scheme has continued to hinge upon good local relationships. This is not only to support awareness-raising and understanding of the service (and what it can and cannot offer), but also to ensure that challenges and issues can be resolved in a timely and effective manner. Furthermore, effective relationships and joined-up communication need to extend beyond GP practices, pharmacists and patients/the wider public and include other health care professionals, such as community nurses, out of hours (OOH) services and opticians who can help raise awareness, and in some cases, refer patients. Effective communication between pharmacists, GPs and the patient (as opposed to bilateral communication, pharmacist or GP and the patient) is also essential for ensuring consistency of messages about the service

Finally, the impact and economic evaluation suggests a positive return on investment in Choose Pharmacy over the next five years based on the performance of the service in the two pathfinders. If the roll out of Choose Pharmacy can follow the same pattern as experienced in the Betsi Cadwaladr and Cwm Taf pathfinder sites (in terms of the number of consultations and prescription items issued), this evaluation provides evidence that the benefits of the services outweighs the costs.

In conclusion, the pathfinders have provided an opportunity for learning what works with respect to implementing and operating a pharmacy based common ailments service – as well as the potential impact of such a service. It has generated a body of evidence to help:

- Inform decisions regarding the continuation of the service (within the two pathfinder areas and in the context of a phased roll out of the service nationally); and
- Maximise the success and benefits of decisions to continue the service / roll out Choose Pharmacy more widely across Wales.

8.2 Recommendations

The Welsh Government, and the pathfinder LHBs, working with key stakeholders and partners (for example NWIS) are working to improve the usability of the eCAS system and reviewing the Choose Pharmacy formulary. Continued focus on these areas will be important for the continuous improvement of the service – the refinement of the eCAS system in particular to improve the day-to-day operation of the service for pharmacists.

Drawing on the lessons learned from the evaluation of the pathfinders, we have identified 14 recommendations to support the subsequent development and roll-out of Choose Pharmacy. These recommendations are presented below.

Raising awareness and understanding of the service

- **Promote and raise awareness of the service with patients and the public from the outset.**
  Adopting a targeted approach (focusing on the most commonly presented ailments, and involving GP-led promotion activity). The variation in the age profile of patients registering with Choose Pharmacy suggests that there will

be value in not only continuing to tailor awareness raising activity to specific ailments, but also to different age groups of patients.

Any promotional activity will need to be cognisant of whether the service is available universally (i.e. whether the service is being delivered at some or all pharmacies within a given area).

■ **Ensure that awareness raising and promotional activity also reinforces understanding of the service to help manage patient's expectations.**

The targeted approach, in particular a focus on the most common ailments, will enable a focus on improving understanding of service. This will help to manage patient expectations with respect to restrictions / circumstances when treatment might not be offered. It will ensure that patients (and other stakeholders/delivery partners) understand what the service can and cannot offer – and why.

As suggested during the interim findings, there will also be benefit in reinforcing how the service provided is similar to the advice and treatment patients will receive at the GP practice. Doing so could help to address any patient perceptions that the benefits of visiting the GP for advice and treatment for common ailments outweigh those of visiting the pharmacy. It is likely that this message would be most effective coming from GPs rather than from other individuals/organisations.

■ **Use multiple channels to promote and raise awareness of the service.**

While GP practices are the principle route to promoting and raising awareness with patients – and creating demand for the service, additional routes have also been effective. These include the use of posters and leaflets in the pharmacy setting, and promoting the service to other health care professionals. In this respect opportunities should be explored to ensure that key stakeholders involved in the delivery of healthcare are aware of the service – so that they can promote the service to their patients. More general promotion through newsletters and social media, as well as displaying posters and leaflets in other community settings – including post offices and community centres – could also be considered.

Approach to rolling out the service

■ **Consider the merits of adopting a more formal approach to selecting pharmacies to deliver Choose Pharmacy.**

Rather than a universal roll-out in a given locality and/or nationally, pharmacies could be more formally selected based on certain set criteria. Such an approach would allow interested pharmacies and local health boards to consider and demonstrate the extent to which key success factors are in place, specifically:

– The pharmacy has capacity to deliver a consistent service. The ability of a pharmacy to deliver a high-quality service daily has been fundamental to the effectiveness of the pathfinders. If the service can only be delivered at low volume or on certain days it will only have marginal effect.

- Relationships between pharmacies and GP practices are established and that there is a commitment to work together to deliver the service. This is not only to support awareness-raising to create demand for the service, but also to ensure that challenges and issues can be resolved in a timely and effective manner.
- Pharmacies and GP practices commit to promoting the service proactively – GP engagement in this respect is particularly important – not only to ensure patients are referred but also to promote patient confidence in the service.

The variable engagement of pharmacists (and indeed GP practices) within each of the localities suggest that a more selective approach to participation could be more cost effective in the first instance.

- **Consider the value in implementing subsequent pathfinders to test the service and establish its cost effectiveness in different contexts.**
  Consider piloting pathfinders within areas distinct from the initial pathfinders. This could involve areas with different demographic characteristics or concentration of GP and pharmacies, than the current pathfinder sites. Doing so will help to establish a more comprehensive evidence base and lessons learned for the operation of a national common ailments service.

- **Continue to deliver the service within the two pathfinder areas, but consider the merits of adopting a more selective approach with respect to which pharmacies offer the service**.
  The findings from the evaluation demonstrate that there is strong support for continuation of the service in both pathfinders. Extension of the pathfinders – particularly for those pharmacies that are actively engaged in delivering the service, will provide an opportunity to test new referral pathways to the service and the opportunity for longitudinal analysis of the demand, operation and impact of the service after its initial implementation.

Supporting pharmacists and GPs to engage with, and embed the service

- **Encourage a focus in the first instance on those common ailments most frequently presented by patients**.
  Focusing on commonly present ailments would help GP practices (and pharmacists) become familiar with delivering and referring to the service. Doing this will also help pharmacists and GPs to communicate to patients what the service can and cannot offer.

- **Consider the merits of convening joint awareness raising/briefing sessions for pharmacists and GP practices.**
  Joint working would help to reinforce a sense of joint accountability for the success of the service and could enhance relationships and continued joint working. The insights gained from the pathfinders together with the experiences of the pathfinder pharmacists and GP practices can help to encourage to engage with the service. These messages are likely to be more effective coming from peers.

- **Develop training/e-learning module for GP practices.**
  Training would support the implementation of the service and could help to ensure appropriate referrals. GP practices should be encouraged and supported to undertake the training prior to the roll-out of the service in a given locality – doing so will strengthen understanding of the eligibility criteria for the service amongst GPs, practice managers and reception staff from the outset. The resources developed by the pathfinder LHBs, including the quick reference guides designed for reception staff will provide useful content for GP practice-specific training tools.

- **Promote and raise awareness of the WCPPE e-learning training model and the value of Choose Pharmacy accreditation.**
  The promotion of the accreditation and module with locums in particular, but also with pre-registration trainee pharmacists could help to increase the capacity to deliver the service both in the short and longer term.

- **Ensure that there is LHB resource to facilitate collective action across the area.**
  The involvement of LHB and resource provided could help to build momentum, and support the initial operation and subsequent embedding of the service. However care should be taken to avoid creating a dependency on LHB and reducing pharmacy and GP practice accountability for promoting and making the service work.

- **Consider possible levers to drive GP engagement in Choose Pharmacy.**
  Examples provided by stakeholders included the cluster development programme – specifically, exploring opportunities to embed engagement with Choose Pharmacy in Cluster Network Action Plans.

  Other

- **Consider opportunities to extend referral pathways to and from the service.**
  The referral pathway from and to WECCs has been well received. Additional referral pathways to Choose Pharmacy, in particular from out of hours and minor injury units should also be considered to strengthen the position of the pharmacy as the first port of call for advice and treatment for common ailments. With respect to OOHs services, the recent introduction of the emergency supply service in community pharmacies provides the foundation for building relationships with OOHs services and establishing referral pathways. The lessons learned from the operation of the referral pathways between pharmacies and GP practices should be reflected in new referral pathways – particularly with respect to understanding of eligibility criteria for the services and the importance of professional communication with respect to referrals back to the service from which the patient originated.

- **Identify opportunities to promote self-management of common ailments as part of the Choose Pharmacy service.**
  Opportunities identified by stakeholders included providing patients with a post card containing guidance for using the treatment issued during a Choose Pharmacy consultation and advice on how to manage the condition should it reoccur.
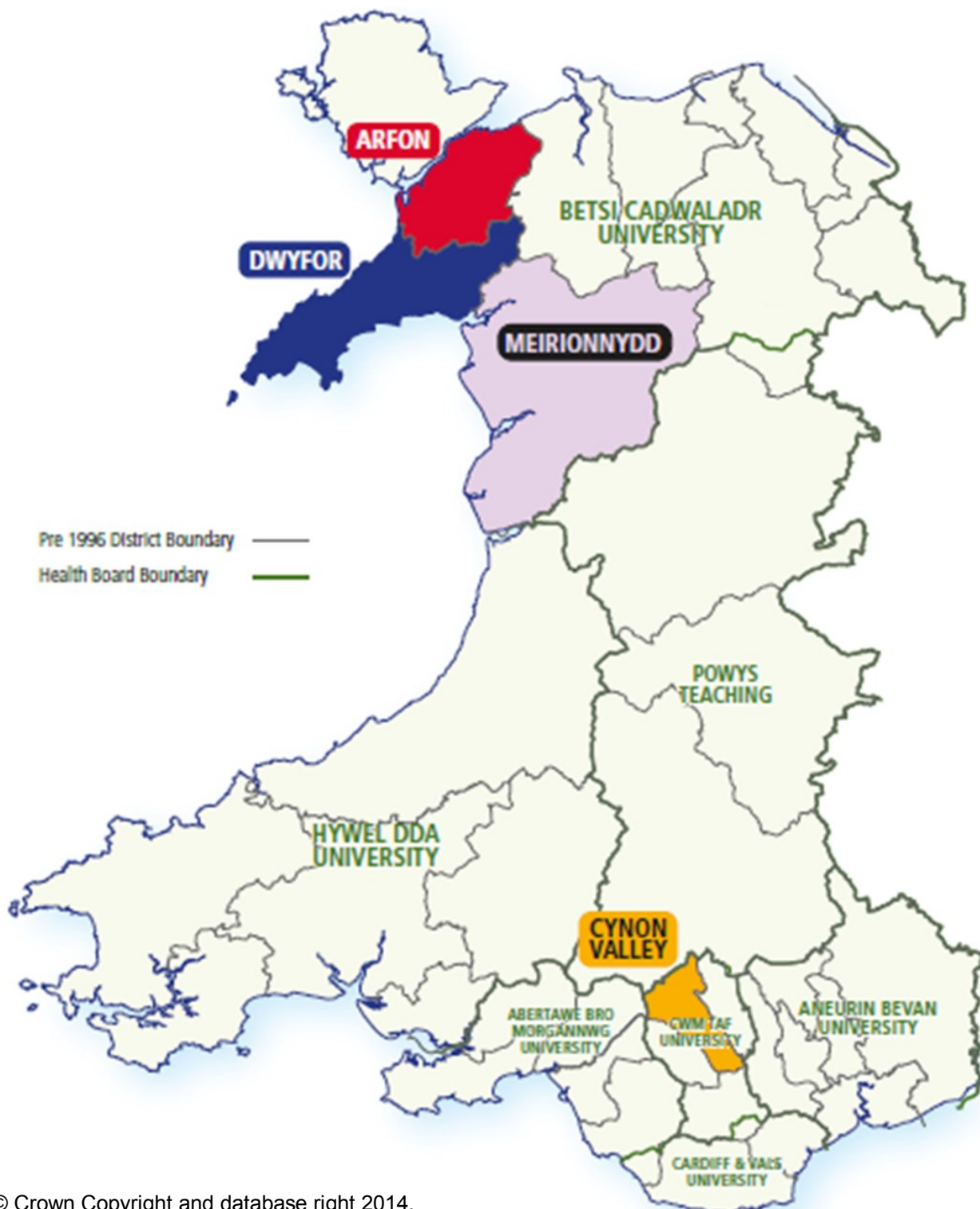
ANNEXES

Annex 1 Conditions treated through the Choose Pharmacy service and associated restrictions

	Condition	Advice / Treatment	Age Restrictions
1	Acne	Treatment	
2	Athlete's Foot	Treatment	
3	Backache (Acute)	Treatment	Aged 20 -55 years
4	Chicken Pox (In Children Under 14)	Treatment	< 14 years
5	Cold Sores	Advice only	
6	Colic	Advice only	
7	Conjunctivitis (Bacterial)	Treatment	> 2 years
8	Constipation	Treatment	>10 years
9	Dermatitis (Acute Exacerbation)	Treatment	
10	Diarrhoea	Advice only	>1 years
11	Dry Eyes	Treatment	
12	Haemorrhoids	Treatment	
13	Hay Fever	Treatment	
14	Head Lice	Treatment	
15	Indigestion And Reflux	Treatment	>12 years
16	Ingrowing Toenail	Advice only	
17	Intertrigo/Ringworm	Treatment	
18	Mouth Ulcers	Advice only	>10 years
19	Nappy Rash	Treatment	
20	Oral Thrush	Treatment	
21	Scabies	Treatment	> 2 years
22	Sore Throat And Tonsillitis	Treatment	
23	Teething	Treatment	> 3 months
24	Threadworms	Treatment	> 2 years
25	Vaginal Thrush	Treatment	Aged 16 – 60 years
26	Verruca	Treatment	>2 years

Where no specific age restrictions apply, the service is delivered in line with the over-the-counter licensed age ranges for the included medications.

Annex 2   Map of the Choose Pharmacy pathfinder sites

Pre 1996 District Boundary ——————
Health Board Boundary ——————

ARFON

DWYFOR

BETSI CADWALADR UNIVERSITY

MEIRIONNYDD

POWYS TEACHING

HYWEL DDA UNIVERSITY

CYNON VALLEY

ABERTAWE BRO MORGANNWG UNIVERSITY

CWM TAF UNIVERSITY

ANEURIN BEVAN UNIVERSITY

CARDIFF & VALE UNIVERSITY

Annex 3   Choose Pharmacy logic model

Inputs	Activities	Short term outcomes	Medium term outcomes	Impact
▪ Programme level costs (one off and recurring), including: – IT infrastructure – Staff costs ▪ Renumeration costs to participating pharmacies ▪ Costs associated with communications awareness raising ▪ In kind costs – e.g. time given by professionals to support the management and delivery of the service ▪ Patient time ▪ Local programme management costs ▪ Additional costs (one off and recurring) to participating pharmacies associated with the service (e.g. staff training, infrastructure)	▪ Registration of patients ▪ Consultation with patients ▪ Provision of advice and, where necessary, treatment ▪ Development of referrals from and to other HCP to the service ▪ Promotion and marketing of the service ▪ Training ▪ Reviewing formulary	▪ Improved public awareness of primary care services for minor ailments ▪ Improved access to advice on, and treatment for, common ailments ▪ Improved patient satisfaction ▪ Improved inter-professional relationships ▪ Extended roles for Pharmacists	▪ Appropriate use of pharmacy, GP and other health care services ▪ Improvements in health literacy ▪ Increased self management of minor ailments ▪ Improved integration of health care services for common minor ailments ▪ Maintained or improved quality of care ▪ Improved job satisfaction	▪ Pharmacy is the first port of call for advice and treatment for minor ailments ▪ Improved health outcomes ▪ Saving and better use of resource ▪ Increased resilience of health care system ▪ Reduced health inequalities / unmet need

A3.1   How is Choose Pharmacy expected to make an impact?

Below is a set of propositions inherent in Choose Pharmacy. These propositions relate to the desired outcomes and impacts of the scheme; they are presented alongside consideration of the mechanisms and causal pathways by which they are expected to be achieved.

A3.1.1 Expected outcomes

Choose Pharmacy will **improve public awareness of primary care services available for common ailments.** It will do this through: awareness raising material in GP practices, pharmacies and other locations; promotion of, and referral to the service by GPs, Practice managers and receptionists, NHS Direct and other health care professionals; word of mouth by friends and family, and registration onto Choose Pharmacy.

Choose Pharmacy will also **improve access to advice on, and treatment of common ailment services**. Pharmacies are typically open for longer hours than GP surgeries and are located where people live and work: on the high street, in supermarkets, and in the heart of local communities. In contrast to GP consultations, patients are able to register with Choose Pharmacy and access an immediate consultation with the pharmacist, without the need to pre-book an appointment. Where appropriate, the patient is also able to access NHS treatment, without the need to purchase over the counter drugs or obtain a prescription from the GP. Improved access in deprived areas could lead to reductions in inequality of access.

Improved access will lead to **improved patient satisfaction**, providing patients are satisfied with the advice and treatment they receive, and symptoms are resolved. Patient satisfaction could, however, decline if the patient is referred to a GP or other Health Care Professional (e.g. if the patient does not meet the eligibility criteria for Choose Pharmacy due to age restrictions). Reduced patient satisfaction, could, in turn affect repeat use of Choose Pharmacy by patients themselves, or by their friends and family.

Improved awareness, access and satisfaction are expected to lead to repeat use of Choose Pharmacy for the same or other common ailments – with the **Pharmacist becoming the default option for patients seeking advice and treatment on common ailments**, resulting in more appropriate use of pharmacist, GP and other health care professional led- health services. Overtime, there will therefore be a reduction in use of GPs and other services for common ailments (see below under impacts).

The duration of the Choose Pharmacy consultation could be longer than an average GP consultation for some patients, providing greater opportunity for the pharmacist and patient to discuss options for treating the common ailment, both now and in the future. This could lead to an **increase in self-management** – including the patient seeking OTC medication in the future, rather than NHS treatment, and / or the patient adopting more preventative approaches to reduce the risk of future common ailments. It could also lead to **improvements in health literacy** in general.

However, some patients who ordinarily buy OTC treatments could opt to use Choose Pharmacy to access free treatment, thereby **reducing self-management**.

In the short term, the pathfinders are also likely to deliver strategic added value as a result of the necessity to develop referral pathways from and to the Choose Pharmacy service, including further **strengthening of professional relationships** and partnership working between the community pharmacies and GP practices and other health care professionals.

This in turn, could lead to **improvements in the integration of health care services for patients seeking advice and treatment for common ailments**, and for those who present to Choose Pharmacy with a common ailment but require referral elsewhere in the system.

These outcomes highlighted above are expected to **maintain or improve the quality of care** for patients with common ailments – as a result of the provision of easily accessible and safe, integrated and evidence based advice and treatment for common ailments.

In addition to improved outcomes for patients and the health care system, the provision of advice and treatment for common ailments will **extend the pharmacist role**. The opportunity to apply extensive medicines expertise and training in common ailments to improve patient outcomes is likely to lead to **improved job satisfaction** for pharmacists.

A3.1.2 Expected impacts

The use of **Choose Pharmacy as the default option for common** ailments is expected to **reduce demand on GPs and other health care professionals for common ailments**. For GPs in particular, this should create more time for consultations for more complex cases. This would make better use of available resources.

Reducing demand for nurse-led common ailment services could similarly result in increased capacity to deliver, for example, long term condition clinics for patients. However, it is inevitable that a cohort of patients will prefer to consult with the GP for their medical needs – and will always choose the GP; some patients are likely to prefer to consult with a GP about specific common ailments, whilst others could well be late 'converters' to Choose Pharmacy – converting after several cycles of visiting the GP for advice and treatment about common ailments.

The shift in demand, taken together with the provision of pharmacy-led high quality advice and treatment for common ailments and improved self-management is expected to lead to **improved health outcomes** (or, at least, the same outcomes at reduced cost). Uptake of Choose Pharmacy by those patients who would ordinarily seek no advice or treatment for common ailments could help to identify unmet need and **reduce health inequalities**. It should also improve the **resilience of the health care system** with managing the increase in demand for NHS services.

The shift in demand is expected to deliver **savings to the health care system / better use of available resources** ('savings' would imply disinvestment following freed capacity). This would be due to net savings associated with the lower costs associated with pharmacist-led consultations relative to GP consultation. The extent

to which Choose Pharmacy leads to a shift from a high cost setting to a low cost setting will be influenced by whether the service displaces nurse-led or GP-led advice and treatment for common ailments in the GP practice setting. In addition, some patients may well seek a 'second' opinion from the GP following a Choose Pharmacy consultation – duplicating costs to the NHS and increasing demand. Conversion of patients who ordinarily self-manage and buy OTC treatments to Choose Pharmacy could also increase costs to, and dependency on the NHS.

Annex 4   Topic guides

A4.1.1 Pharmacist topic guide

Question 1:
Aim: capture and explore how (and the extent to which) pharmacies have engaged with the scheme – and how their experiences have changed over the last year

Main question: Can you start by telling me a little about how your experience of delivering the service over the course of the year? How has it changed?

Probes

- How has the demand for the service changed (e.g. number of consultations – are there any trends in particular types of conditions, ailments etc)
- How, if at all have referral routes changed (e.g. referrals from GPs, other health care professionals, self-referrals, word of mouth etc)
- How have they been promoting the service – has this changed
- What challenges have they had to address and how have these challenges been overcome

Question 2:

Aim: capture and explore whether their experience of delivering the service has been as expected, or whether there have been any unintended consequences.

Main question: Has your experience of delivering the service been as expected and why and how?
Probes
- Has the service been more or less popular than they anticipated
- Has the delivery been easier or harder than expected – explore which aspects of service delivery has been easier or harder
- Have there been any unintended/unexpected consequences arising from delivering the scheme (e.g. haven't had the capacity to deliver consultations)

Question 3:

Aim: explore perceptions of how patients/public are engaging with the service

Main question: From your experience how are patients engaging with the service – has this changed?

Probes
- Who is using it? Any patterns of users?

- How are people becoming aware of the service? (e.g. referral from a GP/ seen a leaflet etc.)
- How many people come back for advice and treatment for other minor ailments – are they seeing any changes in patient/public behaviour (i.e. – are patients/ public starting to use the pharmacy as a first port of call for advice and treatment about minor ailments)
- Outcomes from engagement with the service (e.g. what proportion are prescribed treatment, many referred elsewhere or back to the GP – and why (egg. is it because they don't meet the eligibility criteria?)
- What have been the main drivers and barriers to patient engagement with the service – how can the barriers be addressed?
- Are people who would usually buy OTC treatments for their minor ailments switching to using Choose Pharmacy (if so are there any trends?)

Question 4:

Aim: explore perceptions of how GPs and other health care professionals are engaging with the service

Main question: From your experience how are GPs engaging with the service, and how has this changed?

Probes
- Are GPs referring patients?
- Are there any patterns (e.g. any particular practices more or less likely to refer patients / particular 'types of patients' etc) - what do they think are the reasons behind these patterns (e.g. already have a good relationship with GP practice etc)
- What have been the main drivers and barriers to GP engagement with the service?
- Are other health care professionals referring patients (e.g. nurses, ophthalmologists, etc)?

Question 5:

Aim: to understand the outcomes delivered to date – including any unintended outcomes

Main question: What difference do you think the service has made so far?

a) For you

Probes
- Costs Remuneration
- Time demands
- Change in demand for services
- Improved relationships with GPs/HCPs (inter-professional relationships)
- Greater job satisfaction, improved skills/knowledge, extended role

b) For patients

Probes
- Increased public awareness of the types of support pharmacies can offer
- Improved access to advice on, and treatment for, common ailments
- Improved patient satisfaction
- Improved awareness of when and how to self-treat for common ailments – changes in patient self-management

c) For the health care system
Probes
- Pharmacy becomes first port of call for minor ailments
- Changes in the number of GP consultations for common ailments
- Changes in the level of integration of services (are they joining-up with other services)
- Savings/better use of resources
- Impact on quality of care for common ailments
- Reduced health inequalities

[explore how and why for any outcomes identified]
[if no outcomes have been identified – what would need to happen for the service to make a difference]

- Have there been any unintended outcomes?

Question 6
How could the service be improved? Why, and who should be involved?

Probes
- Reflect back on responses to previous questions [ask them to think about the top thing/ top three things to focus on that would help ensure the service made a difference]
  - Training
  - More promotion (general or targeted)
  - Change to formulary
  - Change to minor ailments covered in scheme
  - Expansion of service to other pharmacies
  - Improved referral pathways from and to the pharmacies
  - Better data collection

A4.1.2 GP topic guide

In the majority of cases we will be speaking to the practice managers rather than GPs – please tailor questions appropriately.

Question 1:

Aim: capture background information about the GP practice and the interviewee

Main question: Can you start by telling me a little about your practice and role?

Probes

- Number of patients, number of GPs, any nurse-led clinics, other clinics offered – do they have a minor ailments clinic
- How many pharmacies provide cover with respect to dispensing prescriptions (e.g. do they have a strong relationship with one pharmacy, or are there, for example, three pharmacies nearby to which patients go to?)
- Have they been involved in any other pharmacy-based services (e.g. smoking cessation etc)?

Question 2

Aim: to understand levels of practice awareness and engagement with the pathfinder.

Main question: moving on to the Choose Pharmacy service – please can you describe how you/your practice has been involved with the service, and how has this changed over the last year?

Probes: [please use the prompts appropriately depending on involvement with the service]

Awareness

- – How aware are you of the service/ how have you become aware of the service - has the practice's level of awareness changed over the past year (the pathfinders were launched in October)?
- – How aware of the service are other receptionists and GPs and other practice staff?
- – [if not involved] – what would help to improve awareness of the service?

Involvement
- *How have they been involved:*
  - – Have they referred patients
  - – Have they promoted the service – how
  - – How are they working with the pharmacies
  - – How long has it been involved with service (e.g. since launch) (if they have only recently become involved – what influenced their decision to get involved)

Question 3

Aim: to capture and explore the lessons learned /how their experience has changed over the last year [if the GP practice is showing no signs of having engaged with pathfinder, please exclude this question]

Main question: How has your experience of the service changed over the last year?

Probes
- Have referral patterns changed – if so how and why
- What challenges have they had to address and how have these challenges been overcome
- What have been the key lessons learned - what's gone well and what hasn't?

Question 4

Aim: to capture and explore possible drivers and barriers for GP practices becoming involved and potential solutions/lessons]

Main question: What are the drivers and barriers for GP practice involvement, and how could the barriers be addressed?

[if not involved] how likely are they to become involved – what would make them get involved and why

Question 5
Aim: explore perceptions of how patients/the public are engaging with the service

Main question: From your experience how are your patients engaging with the service?
[if the practice has not engaged with the pathfinder, focus the question on how they think
their patients are likely to engage/ drivers and barriers etc]

Possible probes
- Who is using it? Any patterns of users? – and any patterns of the types of patients who continue to use the GP practice?
- How are people becoming aware of the service? (e.g. referral from a GP/ seen a leaflet etc) – What are their levels of awareness?
- Is there any duplication of service/consultations (e.g. Is the practice seeing patients come back to the practice for the same or other minor ailments after they have engaged with choose pharmacy service?
  - [If yes, are there any trends in the types of patients/any particular minor ailment?]
- How has patient engagement with the service changed over the year?

■ What are the drivers and barriers to patients using the service – how can the barriers be removed?

Question 6

Aim: to explore and understand the outcomes to date
[if the practice hasn't engaged with the pathfinder, rephrase the question to focus on what difference do you think the service could make]

Main question: What difference do you think the service has made so far?

A) For you/ your practice
Possible probes
■ Changes in the number of GP consultations for common ailments
■ Changes in the demand for GP practice time
■ Have more time to focus on more complex cases
■ Improved relationships with pharmacists

d) For patients
Possible probes
■ Increased public awareness of the types of support pharmacies can offer
■ Improved access to advice on, and treatment for, common ailments
■ Improved patient satisfaction
■ Improved awareness of when and how to self-treat for common ailments – changes in patient self-management

e) For the health care system
Possible probes
■ Pharmacy becomes first port of call for minor ailments
■ Savings/better use of resources
■ Impact on quality of care for common ailments

[Explore how and why for any outcomes identified]

[if no outcomes have been identified – what would need to happen for the service to make a difference]

■ Have there been any unintended outcomes?

Question 5

Main question: How could the service be improved? Why, how and who should be involved? *[if the practice hasn't been involved, rephrase the question to explore what would need to happen to make the service a success.]*

Probes

■ Reflect back on responses to previous questions [ask them to think about the top thing/ top three things to focus on that would help ensure the service made a difference]

  – Training
  – More promotion (general or targeted)
  – Change to formulary
  – Change to minor ailments covered in scheme
  – Expansion of service to other pharmacies
  – Improved referral pathways from and to the pharmacies
  – Better data collection

Annex 5 Treatments prescribed for common ailments presented during consultations through the service

The table below summarises the products prescribed during consultations for each common ailment

Athlete's Foot
Clotrimazole 1% cream
Miconazole 2% cream

Backache
Back book
Paracetamol 500 mg tablets
Ibuprofen 400 mg tablets

Chicken Pox
Chlorphenamine 2 mg in 5 ml sugar-free liquid
Paracetamol 120 mg in 5 ml sugar-free suspension
Paracetamol 250 mg in 5 ml sugar-free suspension
Crotamiton 10% cream
Ibuprofen 100 mg in 5 ml sugar-free suspension
Cetraben cream

Conjunctivitis
Chloramphenicol 0.5% eye drops
Chloramphenicol 1% eye ointment

Constipation
Ispaghula husk (Fybogel) sachets
Lactulose 3.1-3.7 g/5 ml liquid
Macrogols '3350' sachets
Senna 7.5 mg tablets

Dermatitis
Cetraben cream
Diprobase cream
Doublebase gel
Epaderm cream
Hydrocortisone 1% cream
Hydromol ointment
Emulsifying ointment
Hydrocortisone 1% ointment

Dry Eyes
Carbomer '980' 0.2% preservative-free eye drops (Viscotears)

Hypromellose 0.3% eye drops

Haemmorrhoids
Anusol cream
Anusol ointment
Scheriproct ointment via PGD
Anusol suppositories

Hay Fever
Beclometasone 50 microgram nasal spray
Cetirizine 1 mg/ml sugar-free oral solution
Cetirizine 10 mg tablets
Chlorphenamine 4 mg tablets
Loratadine 1 mg/ml oral solution
Loratadine 10 mg tablets
Sodium cromoglicate 2% eye drops

Head Lice
Detection comb
Dimeticone 4% lotion (Hedrin)

Indigestion
Gaviscon Advance aniseed
Gaviscon Advance peppermint
Lansoprazole 15 mg capsules via PGD
Omeprazole 20 mg capsules via PGD
Peptac aniseed
Peptac peppermint
Ranitidine 150 mg tablets (via PGD)

Ringworm
Clotrimazole 1% and hydrocortisone 1% cream
Clotrimazole 1% cream
Miconazole 2% and hydrocortisone 1% cream
Miconazole 2% cream

Nappy Rash
Clotrimazole 1% cream
Sudocrem

Oral Thrush
Miconazole oral gel
Nystatin via PGD

Scabies
Permethrin 5% cream
Cetirizine 10 mg tablets

Sore Throat
Ibuprofen 100 mg in 5 ml sugar-free suspension
Ibuprofen 200 mg tablets
Ibuprofen 400 mg tablets
Paracetamol 120 mg in 5 ml sugar-free suspension
Paracetamol 250 mg in 5 ml sugar-free suspension
Paracetamol 500 mg tablets

Teething
Paracetamol 120 mg in 5 ml sugar-free oral suspension
Ibuprofen 100 mg in 5 ml sugar-free oral suspension

Threadworms
Mebendazole 100 mg tablets
Mebendazole 100 mg/5 ml suspension

Vaginal Thrush
Clotrimazole 10% cream (intra-vaginal)
Clotrimazole 2% cream (external)
Clotrimazole pessary 500 mg (use with clotrimazole 2% external cream)
Fluconazole 150 mg capsule

| Verruca |
|---|
| Salicylic acid 12% (Salatac gel) |
| Salicylic acid 16.7% (Salactol collodion paint) |

Annex 6   Supplementary information impact

A6.1   Difference in Difference approach

Difference in Difference (DiD) is a quasi-experimental approach to measuring the impact of treatment, in this case the introduction of the Choose Pharmacy pathfinders in Wales. The DiD approach attempts to take account of the fact that in the absence of treatment the trend in the dependent variable (GP appointments or GP prescriptions) could change over time, and therefore the difference between the dependent variable before the intervention and after the intervention is not the true impact of the treatment. This is highlighted in Figure A6.1. The group receiving the treatment have moved from point A to point B, indicating the effect of the treatment has been (B – A). However, the comparator group has moved from point C to point D in the same time period. As the comparator group has been selected to be a "match" for the group receiving the treatment, it is assumed that in the absence of the treatment being introduced the treatment group would have moved in the same fashion as the comparator group. This would mean in the absence of the treatment the treatment group would have moved from point A to Point E. This means that the impact of the treatment is (B - E). The DiD approach estimates this as:

$$(B - E) = (B - A) - (D - C)$$

Figure A6.1   Difference in Difference approach
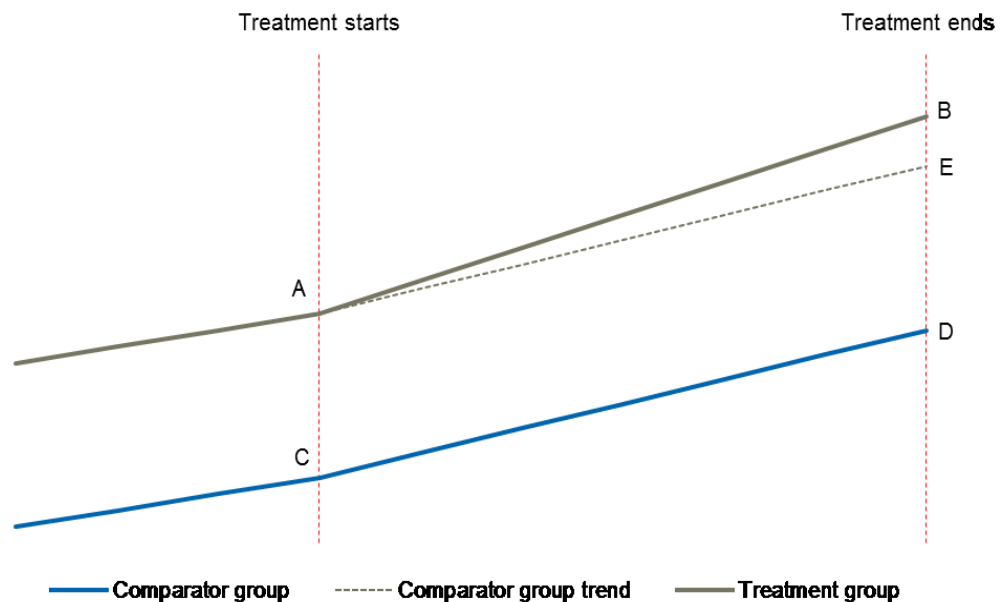
In order to estimate this effect in practice using multiple observations, the equation above can be re-written as:

$$Y_{it} = \alpha + \beta_1 G_i + \beta_2\, t_i + \beta_3 (G_i * t_i) + \varepsilon_i$$

Where:

- ■ Y is the dependent variable;
- ■ α is a constant term;
- ■ t is the time term common across both treatment and comparator group;
- ■ G is the group dummy variable; and
- ■ β_3 is the true effect of the treatment (B – E from Figure A6.1).

A6.1.2 Selection of comparator groups

GP cluster data, produced by the Public Health Wales Observatory in 2012[30] was used to select the comparator sites for each pathfinder area. The data used to compare areas which could be used as comparator areas for the pilot sites was the GP cluster data.

From this data, each pathfinder site was "matched" with a closely related comparator group. The "matching" exercise was carried out using the following categories:

- ■ Age;
- ■ Deprivation categories;
- ■ Drivetime bands;
- ■ Rural/urban classification; and
- ■ Burden of disease for five diseases (Hypertension, Asthma, Diabetes; CHD; and COPD).

These categories have been selected as they are considered to be the most important factors for access to GP and pharmacy services. There is limited evidence to suggest gender plays an important role in access to GP and pharmacy services, therefore gender has not been included in the analysis. The number of patients suffering from heart failure and epilepsy is very small in each GP cluster area, and are therefore assumed to have a limited impact on the overall population's access to GP and pharmacy services. Additionally, it is considered that patients suffering from heart failure would most likely also suffer from hypertension or CHD, therefore would already be considered in the analysis. Therefore, the burdens of disease for epilepsy and heart failure have been omitted from the analysis.

Using the percentage of patients in each category, the squared difference between the pilot site and GP cluster site have been calculated for each of the categories (this is the percentage of the population in each category in each GP cluster area minus the percentage of the population in each category in the pilot site area, multiplied by itself). The squared differences of the categories in each field have been summed to present the Total Sum of Squares for each field.

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[30] Data available at: http://www.publichealthwalesobservatory.wales.nhs.uk/gpclusters . These data are available for each of the seven University Health Boards (UHBs), and are broken down for smaller areas, based on GP clusters. In total, there are 64 GP cluster areas in Wales

The total sum of squares for each field has been weighted by how much influence they have on access to GP and pharmacy services. This is based on *a priori* information from the literature. The weightings are:

■ Age: 25;
■ Deprivation: 25;
■ Drivetime: 20;
■ Rural/urban classification: 5; and
■ Burden of disease: 25.

The weighted Total Sum of Squares for each of the fields was added together, to give a weighted difference from the pathfinder sites and identify the most appropriate comparator groups. The higher the value, the larger the difference between the GP cluster site and the pathfinder site.

A6.1.3 Monthly variation in the number of GP prescribed items

The number of GP-prescribed items issued each month is extremely variable. Figure A6.2 shows the number of prescription items per 1,000 of the population[31], highlighting the monthly variation in the number of prescriptions. This is particularly the case where the data is broken down by condition. This makes estimating the effect of Choose Pharmacy more difficult.

**Figure A6.2   Example of variability in prescription data over time**

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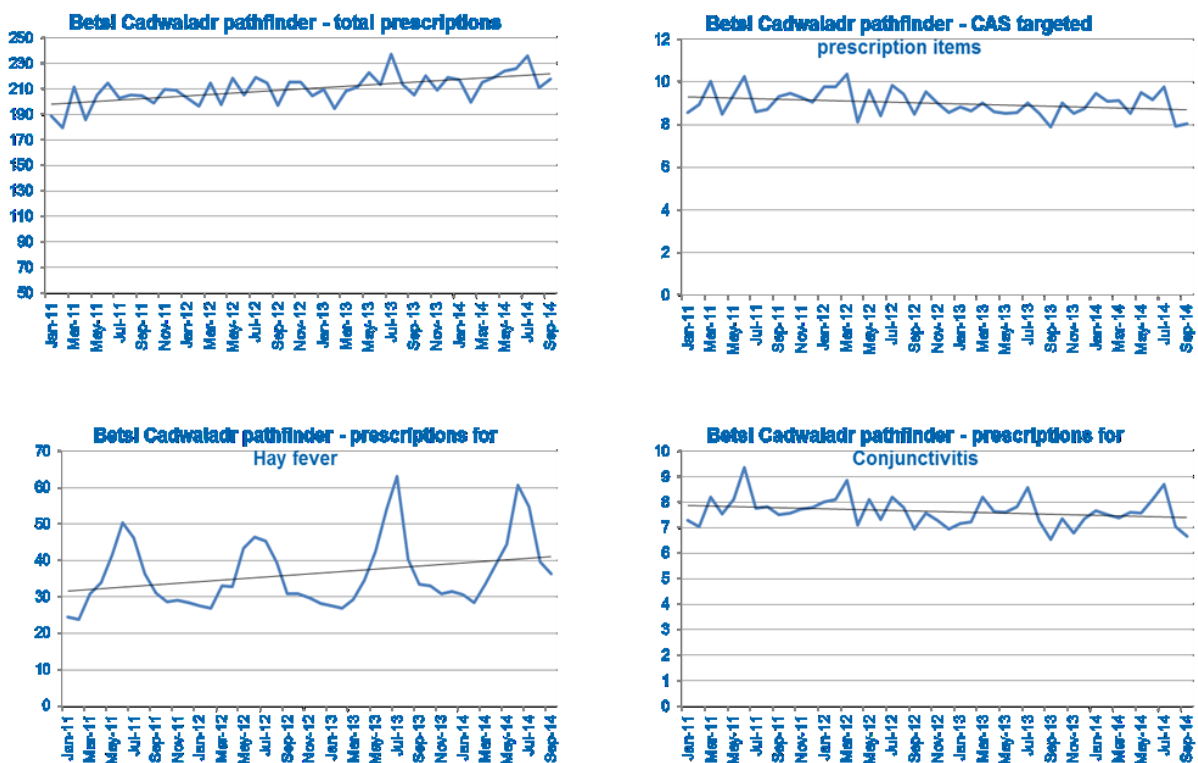
[31] Using information from Welsh Government/ONS Local Authority Population projections, 2006 based.

A6.1.4 Monthly variation in the number of GP prescribed items

Given the relatively low initial demand for the Choose Pharmacy service, the DiD in the number of GP-prescriptions each month was investigated to examine when an impact might start to be seen. In general the DiD coefficient decreases over time, however there is considerable monthly variation in the DiD coefficients (see Figure A6.3 as an example).

Figure A6.3   Monthly Difference in Difference for total prescriptions, aggregate data
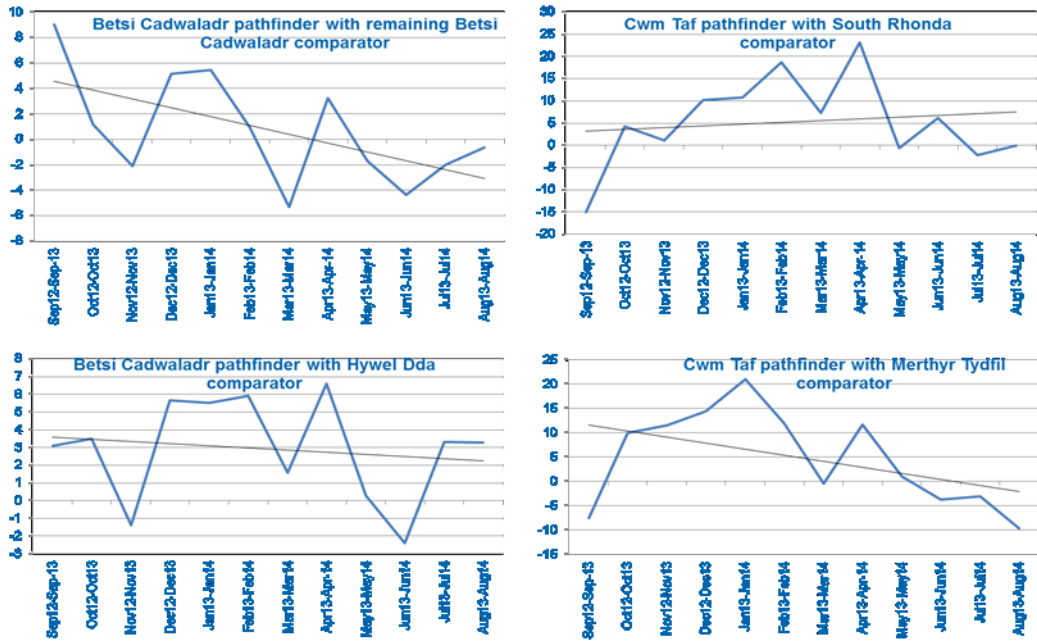
A6.2　Impact analysis: results

The results to the different models are presented here. The results of the impact analysis were expected to show a small reduction in the number of GP prescriptions, due to the small population size and number of pharmacies and GP practices taking part, the short time frame and limited number of items available through Choose Pharmacy. The results are presented by data group. There are few significant results. Linear regression models and probit models have been used for the analysis. A Linear Regression model was used as the coefficient estimates for the impact of the Choose Pharmacy programme were accurate. However, due to the distribution of the dependent variable (whether an individual attends a GP appointment) some of the assumptions for a Linear Regression model may not hold. Therefore, a probit model has also been used to estimate the impact. A probit model is used for models with binary dependent variables, as is the case here. For the linear probability model, the tests of significance are standard t-tests that the coefficient is different from zero. In the probit model, the Wald statistic (analogous to the t-statistic) is used to estimate the significance of a coefficient. Significance values lower that 0.05 mean that the coefficient is significantly different from zero. The DiD coefficient and the 95% Confidence Interval (shown in brackets in the tables) are reported for each model in the tables below.

A6.2.1　Total prescriptions

The results from the DiD models for total prescriptions show that for the two Betsi Cadwaladr comparison sites there are no statistically significant results. However, the DiD coefficients are negative for the rest of Betsi Cadwaladr pathfinder site, which suggests that the introduction of Choose Pharmacy may have reduced the number of prescriptions issued by GPs in the area. In Cwm Taf, both the linear probability and the probit models indicate a statistically significant negative DiD coefficient. The results from the models are presented in Table A6.1. The results for the model using the South Rhondda comparator group have been excluded as the data violated the trending together assumption.

Table A6.1　Results from the models for total prescriptions

Model	Betsi to Rest of Betsi	Betsi to Hywel Dda	Cynon to Merthyr Tydfil
Linear probability model (Aug – Aug)	-0.001 (-0.004 to 0.003)	0.003 (0.000 to 0.007)	-0.010 (-0.017 to -0.002)
Probit model (Aug – Aug)	-0.003 (-0.01 to 0.015)	0.011 (-0.001 to 0.024)	-0.031 (-0.055 to -0.008)

A6.2.2　Choose Pharmacy targeted prescriptions

The results from the models using Choose Pharmacy targeted prescriptions data again show no significant results (see Table A6.2). The model using the

Hywel Dda comparator group has not been reported as the data violated the trending together assumption of the DiD approach

Table A6.2 Results from the models for Choose Pharmacy targeted prescriptions

Model	Betsi to Rest of Betsi	Cynon to South Rhondda	Cynon to Merthyr Tydfil
Linear probability model (Aug – Aug)	0.000 (-0.001 to 0.001))	0.001 (-0.001 to 0.002)	0.000 (-0.002 to 0.001)
Probit model (Aug – Aug)	0.003 (-0.03 to 0.04))	0.017 (-0.062 to 0.097)	-0.007 (-0.077 to 0.064)

A6.2.3 Hay fever

The results for the models using Hay fever prescription data are similar across all three pathfinder and comparator group models. There are again no statistically significant results. However, all the DiD coefficients are negative, suggesting a decrease in hay fever prescriptions being issued by GPs as a result of the introduction of Choose Pharmacy (see table A4.3).

Table A6.3 Results from the model for Hay fever prescriptions

Model	Betsi to Rest of Betsi	Cynon to South Rhondda	Cynon to Merthyr Tydfil
Linear probability model (Aug – Aug)	-0.001 (-0.003 to 0.001)	-0.001 (-0.006 to 0.004)	-0.001 (-0.005 to 0.003)
Probit model (Aug – Aug)	-0.008 (-0.027 to 0.012)	-0.004 (-0.043 to 0.035)	-0.010 (-0.044 to 0.024)

A6.2.4 Conjunctivitis

The results from the models using the data for conjunctivitis prescriptions are again not significant. In the Betsi Cadwaladr pathfinder site, the DiD coefficients are small but positive, whereas in the Cwm Taf pathfinder site the DiD coefficients are small and negative. However, all are insignificant (see Table A6.4)

Table A6.4 Results from the model for Conjunctivitis prescriptions

Model	Betsi to Rest of Betsi	Betsi to Hywel Dda	Cynon to South Rhondda	Cynon to Merthyr Tydfil
Linear probability model (Aug – Aug)	0.000 (-0.001 to 0.001)	0.000 (-0.001 to 0.001)	0.000 (-0.002 to 0.002)	-0.001 (-0.003 to 0.000)
Probit model (Aug – Aug)	0.004 (-0.033 to 0.041)	0.010 (-0.028 to 0.049)	-0.004 (-0.078 to 0.069)	-0.050 (-0.117 to 0.017)

A6.2.5 Head lice and scabies

There are some statistically significant results from the models using data on prescriptions for head lice and scabies using the Cwm Taf comparator sites. However, the coefficients indicate different directions of travel for the two comparator groups, which makes it difficult to interpret the results. The

results from Betsi Cadwaladr are not statistically significant (see Table A6.5.) However, the number of prescription items dispensed in each area for head lice and scabies is very low in all areas. This means a very small number of people could alter the results.

Table A6.5   Results from model for head lice and scabies prescriptions

Model	Betsi to Rest of Betsi	Cynon to South Rhondda	Cynon to Merthyr Tydfil
Linear probability model (Aug – Aug)	0.000 (0.000 to 0.000)	-0.001 (-0.001 to 0.000)	0.001 (0.000 to 0.001)
Probit model (Aug – Aug)	0.081 (-0.034 to 0.196)	-0.217 (-0.433 to -0.001)	0.186 (0.004 to 0.368)

A6.2.6 Vaginal Thrush

There were no statistically significant results using data on prescriptions for vaginal thrush. The effects are all small and insignificant, although for three of the comparator sites the DiD is positive (see Table A6.6)

Table A6.6   Results from model for vaginal thrush prescriptions

Model	Betsi to Rest of Betsi	Betsi to Hywel Dda	Cynon to South Rhondda	Cynon to MT
Linear probability model (Aug – Aug)	0.000 (0.000 to 0.001)	0.000 (0.000 to 0.001)	0.000 (-0.001 to 0.001)	0.000 (-0.001 to 0.002)
Probit model (Aug – Aug)	0.023 (-0.022 to 0.069)	0.020 (-0.028 to 0.068)	-0.010 (-0.129 to 0.108)	0.050 (-0.047 to 0.147)