Archwilio Cymru
Audit Wales

Community Pharmacy Data Matching Pilot

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1 Cwr y Ddinas / 1 Capital Quarter
Caerdydd / Cardiff
CF10 4BZ
Tel / Ffôn: 029 2032 0500
Fax / Ffacs: 029 2032 0600
Textphone / Ffôn testun: 029 2032 0660
info@audit.wales / post@archwilio.cymru
www.audit.wales / www.archwilio.cymru

Andrew Evans
Chief Pharmaceutical Officer
Cathays Park
Cardiff
CF10 3NQ

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Dear Andrew

I am writing to share the findings from a community pharmacy data pilot project we have undertaken, working with NHS Counter Fraud Service Wales (NHS CFS Wales). Our aim was to analyse community pharmacy dispensing data at scale, to provide insight to NHS Wales on areas of high cost and potential fraud. We also saw this work as an opportunity to develop Audit Wales's expertise in fraud analytics techniques.

We chose community pharmacy as the focus of the pilot because it is an area of known fraud risk and does not appear to be scrutinised for fraud as much as some other NHS services.

Community pharmacy also involves considerable expenditure. NHS Wales spent a total of approximately £772 million on drugs, appliances and services related to community pharmacy activity in 2022-23. £162 million of this was for remuneration for the provision of community pharmacy services. The remaining £610 million was reimbursement for medicines and appliances purchased by pharmacies and dispensed against NHS prescriptions.

Our pilot covered Swansea Bay University Health Board and Cwm Taf Morgannwg University Health Board. We focused our analysis on three areas of known risks around fraud and cost: Expensive items; Specials; and Higher cost formulations.

We established and followed data governance procedures carefully, undertaking our work under the Auditor General's data matching powers set out in Part 3A of the Public Audit (Wales) Act 2004. We built an interactive data tool that analysed 31 million lines of data, covering three years of dispensing, and highlighted numerous outliers of interest. We highlighted these outliers to the two health boards involved.

The bullet points below summarise our conclusions:

- Our work did not find any immediate evidence of fraud, although we focused on a small number of fraud risks. While many of the outliers we flagged were known to the health boards in question, some were not. The health boards and NHS CFS Wales carried out further work to understand the issues underlying the outliers. We understand that two pricing errors were found, with a total overpayment value of £22,000, and NHS CFS Wales and NHS Wales Shared Services Partnership (NWSSP) are collaborating on how to reclaim these overpayments. Other outliers were deemed to be explainable and were not found to be cases of fraud or error.
- Our work has flagged a specific risk in relation to limited controls around the cost of Specials. No price restrictions are in place for certain Specials, presenting various opportunities for fraud or error. Although subject to various caveats, we estimate that during the three years covered by the pilot (April 2018 – March 2021), **approximately £700,000 could have been saved** in Wales if each instance of the highest cost dispensing of a Special was reduced to the Special's average dispensing cost. It is possible that our estimate may overstate the possible savings as we have included in our calculation some Specials that have a fixed price, and as such, no saving would be possible. It may also be the case that our estimate is understated because further savings could be possible by reviewing instances of dispensing that are of higher cost than the average but below the maximum cost.
- We flag inherent risks around contractors reimbursed large sums of money for dispensing activity in relation to Expensive items. The data tool identifies five contractors that dispensed more than £1 million of Expensive items during the period covered in the pilot. As a general principle, it may be advisable for health boards to carry out additional checks for contractors dispensing Expensive items at high levels such as this.
- We are aware of some work by NHS CFS Wales and a potential pilot by the Post Payment Verification (PPV) team at NWSSP that relate to identifying and reviewing fraud risks in community pharmacy dispensing activity. And we know that health boards' analysis of dispensing activity tends to focus on data from their health board alone. This approach may miss risks that could be identified by comparing their dispensing activity to other health boards. Also, processes for monitoring dispensing activity vary and a lack of capacity and resource can limit health boards' work. Overall, we concluded there is scope for more analysis of community pharmacy dispensing on a national basis for the purposes of detecting or preventing fraud and ensuring value for money.

We have decided to end the pilot and not develop the tool further. However, we have learnt valuable lessons and are looking for other areas of work in the field of fraud analytics. We also believe the NHS in Wales can learn from the work we have done. There is potential for others to adapt our tool, for example, to inform post-payment verification for dispensing. As such, we have provided our tool and wider learning from our approach to the PPV team at NWSSP. These staff are better placed to overcome the data governance complications we experienced and are also better placed to use the tool to explore outliers with health boards and dispensing contractors.

Any future approach to analysing dispensing data at scale would be greatly enhanced if other data sources could be joined up, particularly if users could access individual prescriptions. Health boards can access individual prescriptions via systems in place provided by NWSSP, but it would have been too complicated for us to access this data in the pilot. We have also learnt that subject matter knowledge, time and appetite from health boards, and multi-agency discussions, will be important to the success of any future fraud analytics approaches.

We are not making specific recommendations, but listed below are three questions that we believe NHS Wales, including its Directors of Pharmacy, should ask itself, given the findings of our pilot. I should be grateful if you could reply with details of any actions you intend to take in response to these issues:

- Are you satisfied with the current approaches in each health board, and across NHS Wales, to identify and investigate outliers in relation to high cost and risk of fraud for dispensing contractor activity?
- Are key lessons and best practice around these matters being shared between health boards? For example, are the health boards sharing examples of where fraud has been identified to make them aware of risks?
- Is there scope for the NHS in Wales to put extra cost-effective controls in place around the variable costs of Specials?

Appendix 1 provides more detail about our data matching pilot. **Appendix 2** summarises our main findings.

I have copied this letter to the Chairs of the Welsh Parliament's Public Accounts and Public Administration Committee, the Health and Social Care Committee, and the Finance Committee, for information. We intend to publish the letter on the Audit Wales website and share the findings with the audit committees of the two health boards in question, as well as with Community Pharmacy Wales and the NHS Wales Counter Fraud Steering Group.

Many thanks to you and your colleagues for their input to this project.

Yours sincerely

Adrian Crompton
Auditor General for Wales

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Auditor General for Wales

Appendices

1 About our data matching pilot

2 Main findings from our data pilot

1 About our data matching pilot

Context

1 Fraud and error present a significant challenge to public finances in Wales. We have previously estimated that fraud and error cost anywhere between £100 million and £1 billion each year to Welsh public services[1]. Given our role in auditing public expenditure, Audit Wales has a keen interest in actions to minimise public sector fraud. We facilitate the detection of fraud and error through the National Fraud Initiative, and we are keen to develop further data matching exercises.

2 Our Data Analytics team has been working with NHS CFS Wales colleagues on a pilot project using community pharmacy dispensing data. Community pharmacy is an area of considerable expenditure and with known fraud risks. NHS Wales spent a total of approximately £772 million on community pharmacy activity, covering both prescribing and non-prescribing costs in 2022-23. £162 million of this was for remuneration for the provision of community pharmacy services. The remaining £610 million was for reimbursement for medicines and appliances purchased by pharmacies and dispensed against NHS prescriptions. Simple application of the Public Sector Fraud Authority's estimate that between 0.5% and 5% of all government spending is lost to fraud and error[2] suggests the amount lost in relation to the £772 million[3] could range from £3.9 million to as much as £38.6 million.

3 We took an innovative approach, accessing data in a new way[4], analysing large amounts of data, and producing an interactive data tool that flagged outliers and formed the basis of facilitated discussions with health boards.

1 Auditor General for Wales, Counter-Fraud Arrangements in the Welsh Public Sector, June 2019

2 Public Sector Fraud Authority, Cross-Government Fraud Landscape Annual Report 2022, March 2023

3 We calculated this figure using the NHS (Wales) Summarised Accounts Local Health Boards, NHS Trusts and Special Health Authorities in Wales. It is the sum of the 'cash limited' totals of 'Pharmaceutical Services' cost and the 'Prescribed drugs and appliances' cost in 'Table 2.1 Expenditure on Primary Healthcare Services'. 'Pharmaceutical Services' include non-prescribing costs, for example running costs and enhanced services of community pharmacies. 'Prescribed drugs and appliances' are mostly the cost of primary care prescriptions.

4 We accessed the data under the Auditor General's data matching powers provided under Part 3A of the Public Audit (Wales) Act 2004 for the purpose of assisting in the prevention and detection of fraud in or with respect to Wales.

4 Beyond an overall aim of preventing and detecting potential fraud and error, the aims of the pilot project were to:

- generate new insights into areas of high cost and potential fraud by analysing dispensing data at scale and by highlighting outliers;
- facilitate discussion between stakeholders to explore outliers and agree improvement actions;
- develop our expertise in fraud analytics techniques to apply to other projects; and
- report on our findings to provide assurance and food for thought on future actions regarding fraud analytics and prevention.

What we did

5 Working with NHS CFS Wales, we involved various other stakeholders and subject matter experts when developing our approach. These included NWSSP, Swansea Bay University Health Board, and Cwm Taf Morgannwg University Health Board, Community Pharmacy Wales[5], the NHS Wales Chief Pharmacists Group, the NHS Counter Fraud Authority in England, and NHS Scotland Counter Fraud Services.

6 To limit the size of the pilot, we included only two health boards in our analysis. We chose Swansea Bay University Health Board and Cwm Taf Morgannwg University Health Board for a number of reasons, including the availability of staff willing to participate in the pilot[6]. We are very grateful for their involvement.

7 This was the first pilot of its kind and, because Audit Wales is not part of NHS Wales, we do not have permissions to directly access certain data. NHS bodies requested that data sharing agreements be put in place. Unfortunately, while such agreements are encouraged by the Information Commissioner's Office, they would not be lawful in this situation, as they would fetter the Auditor General's access rights. We resolved this by drafting a 'Data Sharing Protocol'. The protocol helped ensure that data protection obligations were observed but without such unlawful fettering. And before requesting and receiving the source data from NWSSP, we sent privacy notices to more than 200 community pharmacy dispensing contractors covered in our scope (approximately 28% of the 712 community pharmacies in Wales in 2021-22[7]).

5 Community Pharmacy Wales represents community pharmacies in Wales on NHS matters. Its main objective is to secure the best possible NHS service opportunities, remuneration and terms.

6 On 1 April 2019, the responsibility for providing healthcare services in Bridgend County Borough moved from Abertawe Bro Morgannwg University Health Board (the predecessor of Swansea Bay University Health Board) to Cwm Taf University Health Board (the predecessor of Cwm Taf Morgannwg University Health Board). By including these neighbouring health boards in our pilot, we ensured that our data covered the same sample of community pharmacies across all years.

7 StatsWales, Community pharmacies by LHB and year, 21 March 2024

8 Overall, the data governance aspects of the pilot, though necessary, were complicated and took a large amount of time to implement. They would also have been more time consuming had we involved more than two health boards.

9 We identified key areas of risk and focused on three markers of concern:

a **Higher cost formulations:** Different formulations (eg liquids, tablets, capsules, creams, branded and non-branded etc) of the same active substance[8] can vary widely in price. Higher cost formulations were involved in an NHS CFS Wales investigation that resulted in a criminal prosecution[9]. This came after a pharmacy had dispensed cheaper formulations, then claimed for more expensive formulations. We identified these items as a fraud risk, particularly in the case of hospital prescriptions. Hospital prescriptions are more likely than GP prescriptions to be handwritten and are therefore susceptible to being altered for fraudulent purposes.

b **Expensive items:** Items with a net ingredient cost[10] of £100 or more. In the investigation above, numerous prescriptions were for Expensive items. Therefore, we included this group of items as a potential indicator of fraud risk.

c **Special orders (Specials)**: Items requiring special preparation by a registered manufacturer. For many Specials – those not found in the Drug Tariff[11] – there is no restriction on their price. This presents a risk for potential high costs and/or fraud.

10 **Exhibit 1** provides an overview of the data we considered in the pilot.

8 Active substances give medicinal products their therapeutic effect and are often referred to as active pharmaceutical ingredients.

9 NHS Wales Shared Services Partnership, Pharmacist struck off following conviction for £76,475 fraud, September 2020

10 Net ingredient cost refers to the 'cost (which the dispenser is reimbursed) of the drug before discounts and does not include any dispensing costs or fees. It does not include any adjustment for income obtained where a prescription charge is paid at the time the prescription is dispensed or where the patient has purchased a pre-payment certificate.'

11 The Drug Tariff is a document produced each month by NHS Prescription Services on behalf of the UK Government's Department of Health and Social Care. It specifies what amount of money (as net ingredient cost) a dispensing contractor will be reimbursed for dispensing an item included in the tariff, establishing a fixed price for each item found in the tariff each month.

Exhibit 1: dispensing data reviewed in the pilot, April 2018 – March 2021

Dataset	Approximate number of items	Approximate net ingredient cost of items
Formulations	30,785,000	£96.2 million
Expensive items	327,000	£70.6 million
Specials	19,000	£2.8 million

Note: The datasets are not mutually exclusive, items in one dataset may be found in another. The formulations data includes approximately 70 active substances, corresponding to approximately 1,170 formulations. Each formulation has a distinct combination of strength, form, and/or brand for the given active substance. We worked with NHS CFS Wales and the health boards to identify a range of active substances with formulations that are particularly expensive and/or of concern.

Source: NHS Wales dispensing data provided by NWSSP

11 We built an interactive data tool iteratively using Microsoft Power BI. The aim was to produce a tool that allowed the data to be explored quickly and easily to identify points of concern relating to anomalies, potential fraud, and areas of high cost.

12 Once the health boards had used the tool, we met with them and NHS CFS Wales to explore the issues arising. We presented a sample of outliers that we identified from using the tool, then the health boards provided initial responses to the outliers raised. Some of the outliers were easily explainable and were known by the health boards. Others were not known so the health boards and NHS CFS Wales carried out further work to understand the issues underlying the outliers.

2 Main findings from our data pilot

13 This section summarises our main findings under the following headings:

a The data tool flags clear outliers of potential concern;

b Variation in the cost of Specials suggests potential for savings;

c NHS Wales has limited controls in place for Specials;

d There are inherent risks around community pharmacy contractors that are reimbursed large sums of money for dispensing activity in relation to Expensive items;

e There is scope for more central analysis of risks around community pharmacy dispensing; and

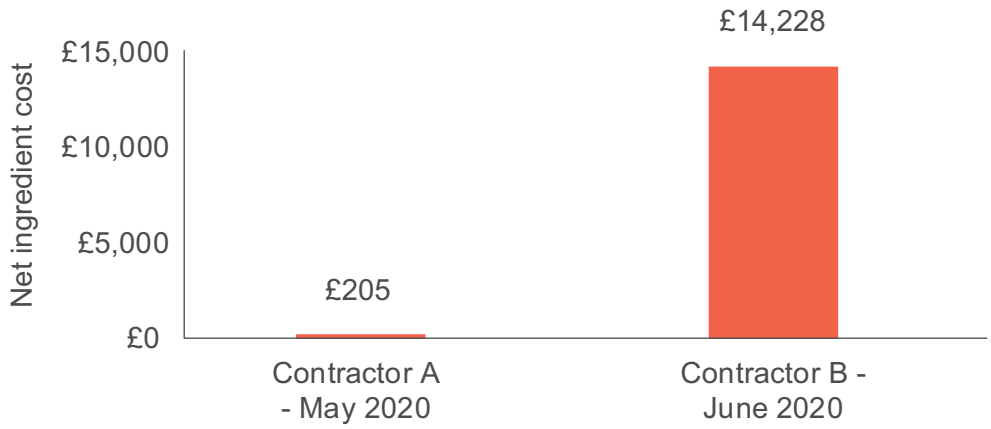
f Our pilot has identified valuable learning for future fraud analytics approaches.

The data tool flags clear outliers of potential concern

14 We have used anonymised examples, taken from our interactive tool, to illustrate the key findings. The tool highlights many more outliers and examples than presented here. Further exploration of these outliers will depend on appetite from the health boards and NHS CFS Wales to use the tool. While we are flagging outliers as highlighted in the data tool, this does not necessarily mean that fraud or error is present or that there is definite potential for cost savings.

15 **Exhibit 2** shows a clear outlier suggesting a large cost discrepancy. It shows an item submitted for reimbursement in May 2020 costing £205 for one contractor but then costing £14,228 when submitted for reimbursement in June 2020 by a different contractor. We found that this was due to an error in the source data, and the correct cost was £1,428 not £14,228. The higher price was reimbursed to the contractor. NHS CFS Wales and NWSSP are now collaborating on how to reclaim the relevant overpayment. We present this outlier because it shows the potential for data tools such as ours to flag such discrepancies.

Exhibit 2: discrepancy* in net ingredient cost for a particular item submitted for reimbursement by different contractors one month apart**



*The £14,228 was paid to dispensing Contractor B rather than the correct cost of £1,428, an overpayment of £12,800. The error is being reviewed by NHS CFS Wales and NWSSP to consider what action to take regarding this overpayment.

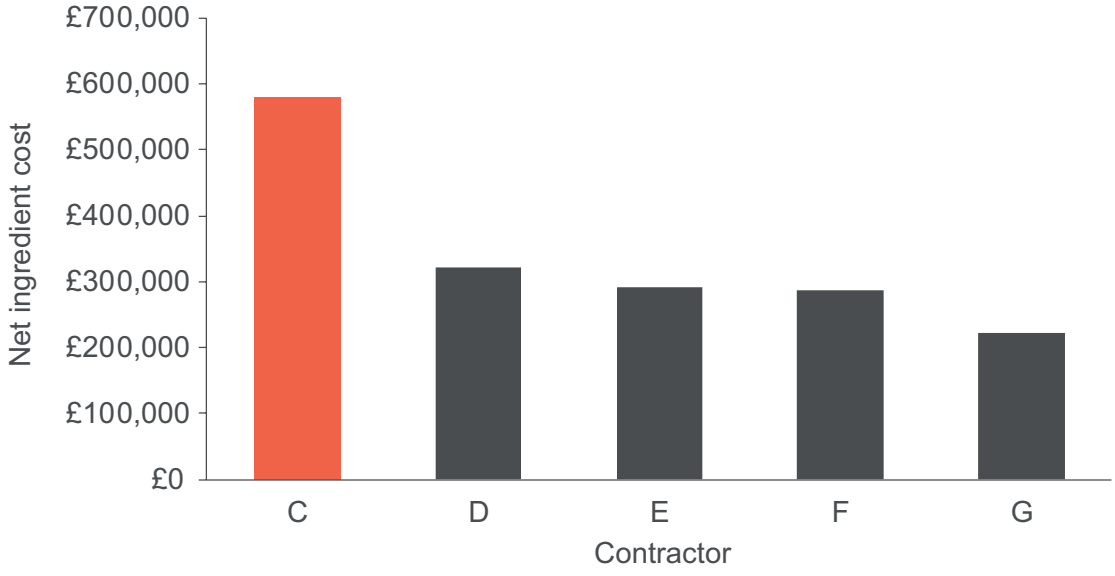
**Reimbursement refers to the money contractors are reimbursed for the medication costs alone and does not include dispensing fees or other costs. The medication costs reimbursed may not be the same as the total net ingredient cost of the items dispensed by the contractor, with contractors often receiving deductions in the total net ingredient costs of items they have dispensed.

Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

16 **Exhibit 3** shows a clear outlier where contractor C has a large cost associated with Expensive items prescribed by hospital prescribers. Contractor C dispensed more than £580,000 worth of such items between April 2018 – March 2021, almost double the next nearest contractor. This is not necessarily unusual activity, with dispensing activity for hospital outpatient prescriptions depending, at least partly, on the policies and procedures of the health board in question.

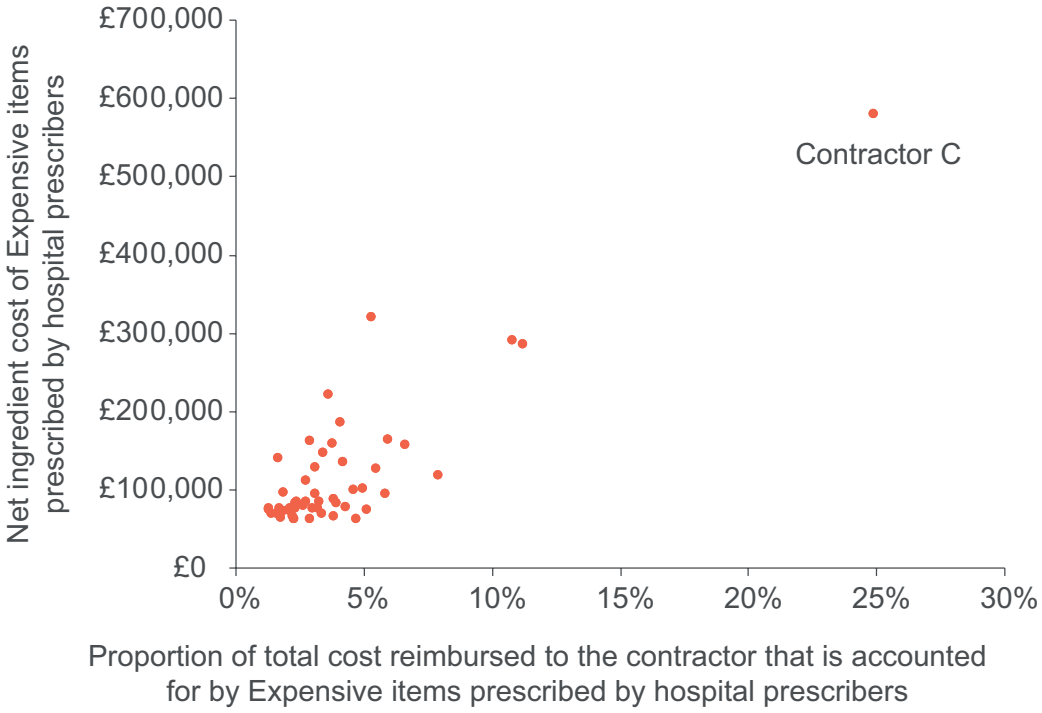
17 **Exhibit 4** combines analysis of the **Exhibit 3** metric with the proportion of the total cost reimbursed to community pharmacy contractors that is accounted for by Expensive items prescribed by hospital prescribers. **Exhibit 4** shows that contractor C is an outlier in relation to both metrics. This provided greater weight to the argument that contractor C was displaying different dispensing patterns to other contractors. In this case, the relevant health board easily explained this outlier due to contractor C's proximity to a hospital, but this example illustrates the potential for detecting anomalous dispensing patterns using one or more metrics.

Exhibit 3: the five community pharmacy contractors that dispensed the highest total net ingredient cost of Expensive items prescribed by hospital prescribers, April 2018 – March 2021



Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

Exhibit 4: comparison of two metrics of interest, applied to data for individual community pharmacy contractors, April 2018 – March 2021



Note: Each orange dot represents an individual contractor, showing the 50 community pharmacy contractors with the highest total cost of Expensive items, in terms of net ingredient cost, prescribed by hospital prescribers.

Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

18 **Exhibit 5** shows how the data tool allows users to explore how community pharmacy contractors perform in relation to multiple metrics, helping to flag contractors that warrant further analysis. The exhibit suggests contractors H and K could be of particular interest to review.

Exhibit 5: example of seven community pharmacy contractors reviewed against multiple metrics, April 2018 – March 2021

This exhibit is based on comparisons for contractors with some of the highest values for Metric 2. Higher values are highlighted in bolder colour.

	Expensive items		Specials		Higher cost formulations	
Contractor	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6
H	£1,498,199	24%	£15,836	0.3%	£1,184,442	31%
I	£805,751	22%	£19,847	0.5%	£847,091	31%
J	£767,544	33%	£3,527	0.2%	£375,844	20%
K	£767,056	27%	£353,425	12.6%	£482,895	16%
L	£698,364	23%	£6,472	0.2%	£544,566	22%
M	£571,122	22%	£23,304	0.9%	£424,811	17%
N	£503,651	26%	£6,303	0.3%	£302,580	17%

Notes:

Metric 1 is the total net ingredient cost of all Expensive items dispensed by each contractor. Metric 2 is the proportion of the total cost the contractor is reimbursed for that is accounted for by Metric 1.

Metric 3 is the total net ingredient cost of all Special items dispensed by each contractor. Metric 4 is the proportion of the total cost the contractor is reimbursed for that is accounted for by Metric 3.

Metric 5 is the total net ingredient cost for all the items in the formulations dataset dispensed by the contractor. Metric 6 is the proportion of metric 5 that is accounted for by the higher cost formulation items identified that are dispensed by each contractor.

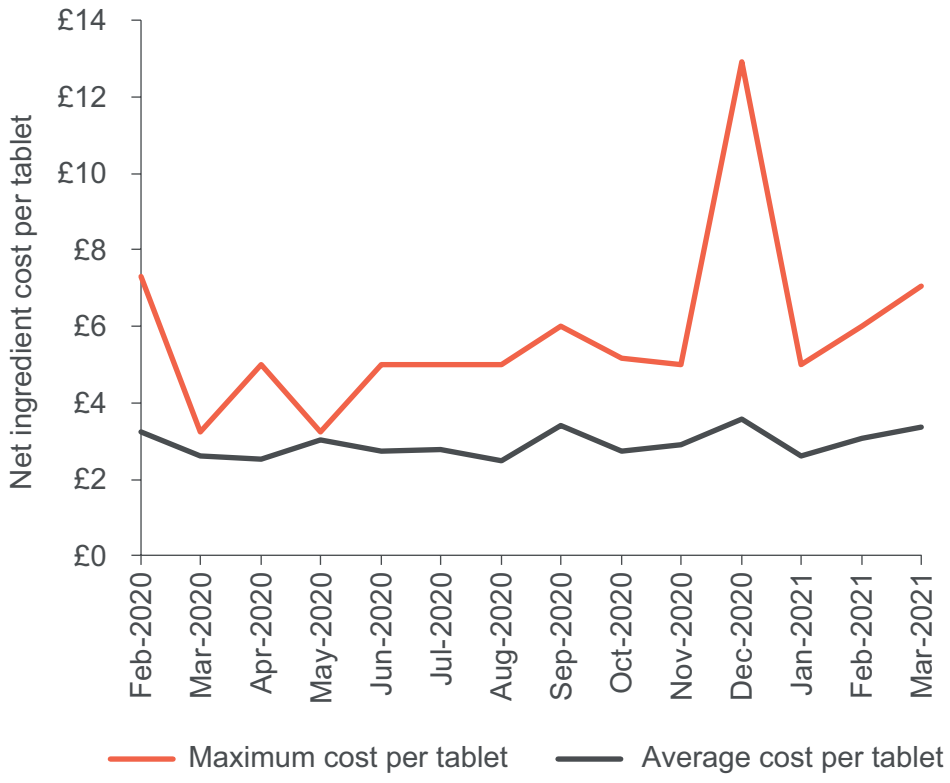
Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

Variation in the cost of Specials suggests potential for savings

19 As noted in **paragraph 9,** Specials not included in the Drug Tariff have no restriction on price. Our data tool highlights several cases where a particular Specials item has varied widely in price within a given month.

20 **Exhibit 6** shows a trend in the maximum and average net ingredient cost of dispensing a particular Specials item (Sucralfate 1-gram tablet)[12]. The costs vary greatly within each month, with instances of the price per tablet rising to nearly £13 in one month compared to an average of £3.56 for the same month. For each month of data, the differences between the maximum and average price indicate potential opportunities for cost savings. Where the cost is much greater than average, this might present cause for review to identify the potential for cost savings.

Exhibit 6: maximum and average net ingredient cost per tablet of Sucralfate 1-gram tablets dispensed by community pharmacy contractors, February 2020 to March 2021



Note: Dates refer to date submitted for reimbursement, which may be different to the date of dispensing.

Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

12 Sucralfate 1g tablets were added to the Drug Tariff in March 2022, after we had completed our pilot. While we have highlighted this issue by using Sucralfate 1g tablets as an example, the general issue applies to all Specials items not named in the Drug Tariff.

21 We identified many other examples of variability in the maximum and average cost of Specials. For example, **Exhibit 7** shows an example where Contractor O submitted an item for reimbursement for £874, while other contractors had done so for £435 or less, for the same item (same medication, quantity, and strength) within the same month. This indicates an opportunity to potentially save £439 or more on this one item alone. NHS CFS Wales reviewed the prescriptions for these items. Price differences were due to different suppliers and pack sizes. The £874 claim price was identified as significantly different from the other claims, and a good example of a prescription that may require further verification work from the health board and/or the PPV team at NWSSP.

Exhibit 7: net ingredient cost of 112 tablets of Sucralfate 1g submitted for reimbursement in May 2018 by four community pharmacy contractors

Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

22 The issues highlighted in **Exhibits 6 and 7** may present genuine potential for cost savings. However, without further investigation, working with the health boards, as well as someone with in-depth subject matter knowledge, to review individual prescriptions or invoices, we do not know which cases are normal behaviour, error, or fraud.

23 We estimate that for the two health boards reviewed, approximately £200,000 could have been saved over the three years covered in the pilot if each instance of highest cost dispensing of a Special for a given month[13] was reduced to its average cost for that given month. The calculation considers each month in isolation due to the cost for a Special potentially varying over the time of the pilot.

24 Using data from StatsWales[14] we determined the total net ingredient cost for medications for all of NHS Wales is approximately 3.5 times that of the two health boards. Extrapolating from the two health boards to all of NHS Wales using this figure produces an equivalent savings estimate of approximately £700,000.

25 These calculations are presented for illustrative purposes and are subject to certain caveats and a large degree of uncertainty. The calculations assume that it is reasonable to extrapolate the potential savings in the two health boards to all of Wales. The calculations also assume that all instances of the highest cost dispensing could be reduced, and so provide a potential saving opportunity. It is not clear from the data whether this is a reasonable assumption. It is also possible that our estimate may overstate the possible savings, given that we have included in our calculation some Specials that have a fixed price, and as such, no saving would be possible. Further information and investigation would be required to clarify the savings possible.

26 In addition, our calculations assume that it is reasonable to use just the highest and average cost of dispensing to estimate potential savings. We have used the highest and average cost because Specials are dispensed relatively infrequently, providing a limited number of dispensing instances to undertake the savings calculations each month for a given Special. However, it is possible that our estimate may understate the possible savings, given that it does not consider instances of dispensing that are higher than the average cost but below the maximum. Additionally, the average cost may not reflect good value. Reducing costs to below the average could identify further potential savings.

13 Highest net ingredient cost per unit of medication for medication for given month. The month being the date the item was submitted for reimbursement, which may be different from the date of dispensing.

14 StatsWales, Prescription items and cost by area and BNF chapter by year, 27 June 2023

NHS Wales has limited controls in place for Specials

27 The UK Government's Department of Health and Social Care decides which Specials to include in the Drug Tariff[15]. The Drug Tariff has changed over time, for example Part VIIID 'Arrangements for payment for Specials & Imported Unlicensed Medicines with Prices Determined Relative to a Commonly Identified Pack Size' was added in March 2022, introducing controls on payments for some additional Specials. We are not aware of any other fixed controls regarding the cost of Specials outside inclusion in the Drug Tariff.

28 Community pharmacies do not need approval from health boards before dispensing Specials. And health boards cannot direct contractors to use cheaper manufacturers unless specified in the Drug Tariff. Some health boards do review high-cost items to ensure they are appropriate. Health boards can also provide advice and support for the prescribers of Specials. The prescriber has responsibility to assess what is clinically appropriate for the patient and the dispensing contractor has responsibility to raise any clinical concerns.

29 Prices for Specials not found in the Drug Tariff can vary between different contractors, GP clusters of contractors, and health boards. Analysis of Specials costs across Wales, comparing health boards, may therefore highlight potential savings opportunities. We are not aware of such analysis being done.

30 Invoices for Specials specify what a manufacturer has charged a pharmacy contractor for a given item. They can be used to confirm that the contractor has claimed and been reimbursed for the correct amount. However, we are not aware of any requirement currently for contractors to submit invoices for Specials. And for invoices that are submitted, we are not aware of any routine inspection of them by NWSSP as part of the reimbursement processes to community pharmacy contractors for Specials. Review of these invoices in future analysis could highlight cases of error or fraud and lead to potential cost savings. Using a tool similar to ours could allow more informed decisions on which contractors to focus on.

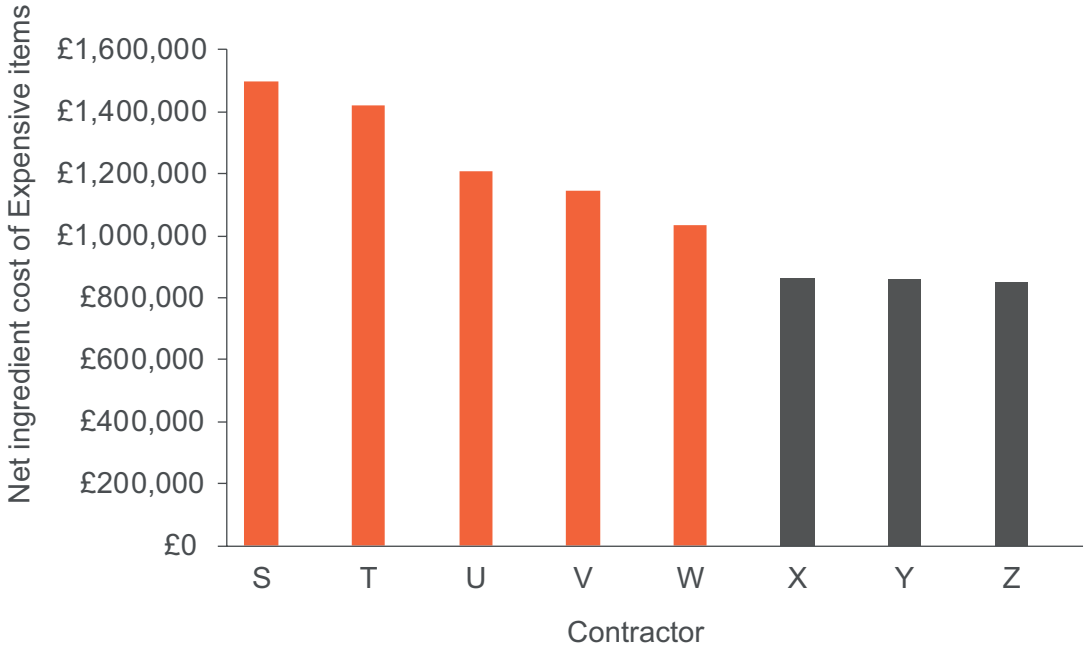
15 This control limits the amount the dispensing contractor can be reimbursed, in terms of the net ingredient cost of the item, for dispensing a Special in the Drug Tariff. This control is limited to this aspect in the supply of a Special. The dispensing contractor may have generated income or lost money depending on whether they paid more or less than the amount reimbursed to obtain the Special from the manufacturer. The contractor will also receive an additional dispensing fee for a Special.

31 As a result of our pilot highlighting concerns around the cost of Specials, NHS CFS Wales has discussed with the PPV team in NWSSP the potential for further work on dispensing risks. The PPV team has learnt from our approach to develop a dashboard to highlight data of concern as part of a pilot that may be carried out this year. The pilot would review prescription invoice claims for potential outliers, possible erroneous claims and potential incorrect data entry. Depending on the outcome, this may become a permanent check undertaken by the PPV team.

There are inherent risks around community pharmacy contractors that are reimbursed large sums of money for dispensing activity in relation to Expensive items

32 **Exhibit 8** shows the eight community pharmacy contractors in our dataset that dispensed the highest total cost (as net ingredient cost) of Expensive items. It shows that five contractors each dispensed more than £1 million of Expensive items during the period covered in the pilot.

Exhibit 8: the eight contractors in our dataset with the highest total net ingredient cost of all Expensive items dispensed, April 2018 – March 2021



Source: Audit Wales analysis of NHS Wales dispensing data provided by NWSSP

33 The data tool provided value in enabling these and other contractors with large reimbursement costs, for the medication and appliances dispensed, to be identified quickly and easily alongside other information regarding risks related to contractors. The health boards may wish to review these contractors given the large sums of money reimbursed to these contractors for Expensive items. As a general principle, it may be advisable for health boards to carry out some additional checks of contractors with high levels of reimbursement costs for Expensive items, as well as high levels of costs overall, given the large sums of money involved and the potential to identify savings and instances of possible fraud.

There is scope for more central analysis of risks around community pharmacy dispensing

34 **Paragraphs 20 to 26** highlight scope for specific savings but our pilot focused on only three markers of concerns. Fraud can take place in other ways. For example, a contractor may claim to have dispensed items that have not been collected by patients, fraudulently claiming for the cost of items and dispensing activity that has not been completed.

35 Health boards have processes in place to monitor various aspects of dispensing activity, however, these vary between health boards. Relying on the work of individual health boards alone may also miss opportunities to identify areas of high cost and potential fraud across Wales. For example, a group of contractors may not present as anomalous in the health board alone but could be identified as anomalous when compared to all contractors in Wales.

36 A lack of capacity and resource in health boards can limit health boards' work in interrogating risks around community pharmacy dispensing data. Processes can depend on the knowledge and availability of an individual member of staff, which poses succession planning risks, as well as risks around a single point of failure. The complexity of analysis required and the volume of data involved add further disincentives for health boards to carry out this work.

37 We have not been made aware of any analytical work to review community pharmacy dispensing fraud risks for NHS Wales other than work undertaken by NHS CFS Wales, the potential PPV pilot mentioned in **paragraph 31** and the analysis carried out by individual health boards in isolation. NHS CFS Wales has reviewed areas of risk around community pharmacy such as the initial investigation that informed our pilot, as well as reviews of out of pocket expenses. We concluded that more centrally supported work to detect and prevent fraud in dispensing activity, as well as to ensure value for money, could be beneficial.

Our pilot has identified valuable learning for future fraud analytics approaches

38 We have learnt valuable lessons from our pilot, including:

a **It is feasible to analyse entire populations of data** – Our approach and our interactive tool allowed us to focus on known risks and made it possible to explore millions of data items. This could allow much more in-depth analysis than more limited, sampling approaches.

b **Subject matter knowledge and multi-agency discussions are vital** – The analysis of specific risks was most effective when health board staff were in discussion with NHS CFS Wales and Audit Wales. These discussions brought together a blend of local and subject matter knowledge, as well as specialist fraud and data skills. Without detailed subject matter knowledge related to the everyday realities of community pharmacy and dispensing practices, it was sometimes difficult for us to fully understand the risks and issues.

c **Time and appetite are necessary in health boards to make use of data tools** – Our approach relied on health board staff having time to explore the data tool. Without this, future tools may not be used fully, and opportunities to identify and respond to concerns may be missed.

d **It would be beneficial to join up our pilot data with other data sources** – Any future approach to analysing dispensing data at scale would be greatly enhanced if other data sources could be joined up, particularly if users could access individual prescriptions. This would allow efficient exploration of outliers, with all data being in one place. The lack of data on individual prescriptions was a barrier in our pilot project. Health boards can access individual prescriptions via systems in place provided by NWSSP but it would have been too complicated for us to access this data in the pilot because we are not an NHS organisation and the data governance requirements would have been substantial.

39 Our work did not find any immediate evidence of fraud, although our work focused on a small number of fraud risks. While many of the outliers we flagged were known to the health boards in question, some were not. The health boards and NHS CFS Wales carried out further work to understand the issues underlying the outliers. We understand that two pricing errors were found, with a total overpayment value of £22,000, and NHS CFS Wales and NWSSP are now collaborating on how to reclaim these overpayments. Other outliers were deemed to be explainable and were not found to be cases of fraud or error.

40 We have decided to end the pilot and not develop the tool further. This is mainly due to the complexities of delivering such a project as an external organisation to the NHS in Wales (see **paragraphs 7 and 8).** However, we will build upon the learning from the pilot and look to undertake new fraud analytic projects, including one using a data matching approach to explore whether patients are accurately registered in GP lists.

Archwilio Cymru
Audit Wales

Audit Wales

1 Capital Quarter

Tyndall Street

Cardiff CF10 4BZ

Tel: 029 2032 0500

Textphone: 029 2032 0660

E-mail: info@audit.wales

Website: www.audit.wales

We welcome correspondence and telephone calls in Welsh and English.

Rydym yn croesawu gohebiaeth a galwadau ffôn yn Gymraeg a Saesneg.