

Evaluation of Evidence Provided by PharmOutcomes New Medicine Service Data (Summary report)

The New Medicine Service (NMS) was commissioned nationally by the NHS in October 2011 for an initial period of 18 months, with future commissioning being dependent upon evidence of the effectiveness of the service being demonstrated.

This report summarises the key points arising from an analysis of the PharmOutcomes data for the first year of provision of the NMS. A full report with descriptive statistics is available from www.psn.org.uk/nms.

Data availability

There are a total of 236,408 medicines recorded on PharmOutcomes from completed NMS which represents a total of 224,554 patients recruited from 1st October 2011 to 30th September 2012.

Demographics and Recruitment

A variety of demographic data is collected by the PharmOutcomes system. The patients recruited to the service do not appear to favour a particular gender, with 53.1% female and 46.9% male.

The ethnicity of recruited patients (where stated by the patient) is similar to the prevalence of ethnicity in England, as measured by the 2001 census. 17,639 (7.9%) patients declined to state their ethnicity,

Patients can be recruited by the pharmacist or pharmacy team directly, or they may be referred to the pharmacy by the GP practice. 99.6% of patients were recruited by the pharmacy team, although in some areas higher GP referral rates were achieved.

Medicines and Conditions

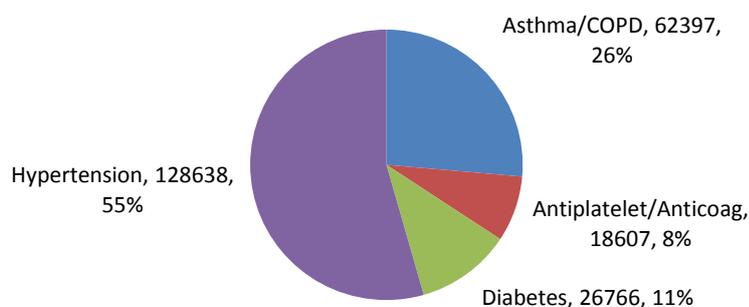
An individual patient may receive a number of NMS interventions, either as part of a single initiation of a number of medicines or as an escalation of therapy where new medicines are added over the course of the period examined. Table 1 shows the number of medicines for which a patient has received an NMS Intervention.

Table 1 - Number of patients with a number of NMS Medicines

Number of Medicines	1	2	3	4	5	6
Number of Patients	214,211	9,074	1,056	187	23	3

Four conditions have been selected for inclusion within the NMS and the recruitment rates for medicines contained within each condition group, as recorded via PharmOutcomes, are shown in Figure 1.

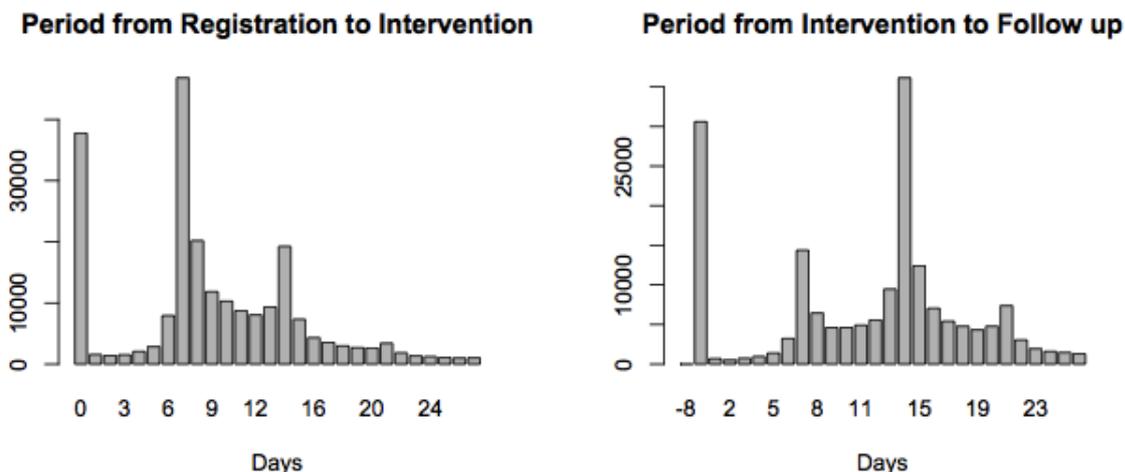
Figure 1 - NMS Interventions for the four conditions



Timing of the provision of Intervention and Follow Up

The service specification of the NMS allows for flexibility in engagement with patients. The period from recruitment of the patient to the service to Intervention is stated to be typically between 7 and 14 days and then a further 14 to 21 days after the Intervention for the Follow up. The notable rises around the particular deadlines are clearly visible in the data shown in Figure 2.

Figure 2 - Period from Recruitment/Registration to Intervention to Follow up



Issues at the Intervention stage

For each medicine, whether being taken as prescribed or not, there were a variety of needs that the patient had and which were identified by the pharmacist, as shown in Table 2.

Table 2 - Needs identified at Intervention

Need Identified	Condition	Using as prescribed	Not using as prescribed
Need more information about the medicine	Antiplatelet/Anticoag	1397	73
	Asthma/COPD	3565	643
	Diabetes	1718	140
	Hypertension	6518	401
Side-effects	Antiplatelet/Anticoag	1721	226
	Asthma/COPD	4041	795
	Diabetes	4548	5013
	Hypertension	20175	2345
Negative feelings about the medicine	Antiplatelet/Anticoag	359	111
	Asthma/COPD	1467	747
	Diabetes	649	227
	Hypertension	3274	1097
Uncertainty whether the medicine is working	Antiplatelet/Anticoag	663	24
	Asthma/COPD	4843	719
	Diabetes	1542	84
	Hypertension	7606	281
Concern about remembering to take the medicine	Antiplatelet/Anticoag	191	13
	Asthma/COPD	447	147
	Diabetes	209	35
	Hypertension	772	89

Calculating the proportion of patients affected by side-effects within each condition group provides potential insight into patient attitudes to therapy and disease. The results of this in Table 3 indicate that asthma and COPD therapies have the lowest incidence of side-effects of the four. However, these side-effects cause non-adherence at nearly twice the rate of the other three disease states. Thus, the incidence of side-effects for

patients on medicines that affect blood clotting is over 30% higher than that for the respiratory conditions; however the proportion of non-adherence is much lower than the latter. Clinical experience indicates that this may be due to patient perception of the ultimate effects of their condition which has a very clear perceived risk of morbidity and mortality. The engagement with the patient around the understanding of their condition is therefore relatively more important in the respiratory cohort.

Table 3 - Adherence and Non-adherence caused by side-effects

Condition	Experiencing side-effects but using as prescribed	Experiencing side-effects so not using as prescribed	*Ratio of adherent:non-adherent
Antiplatelet/Anticoag	1721/18607 (9.2%)	124/18607 (0.7%)	13.9:1
Asthma/COPD	4041/62397 (6.5%)	513/62397 (0.8%)	7.9:1
Diabetes	4548/26766 (17.0%)	336/26766 (1.3%)	13.5:1
Hypertension	20175/128638 (15.7%)	1567/128638 (1.2%)	12.9:1

* Higher ratio indicates higher adherence and less non-adherence

For the 11,352 medicines that were identified as not being taken as prescribed, a variety of reasons for this situation were elicited in Table 4.

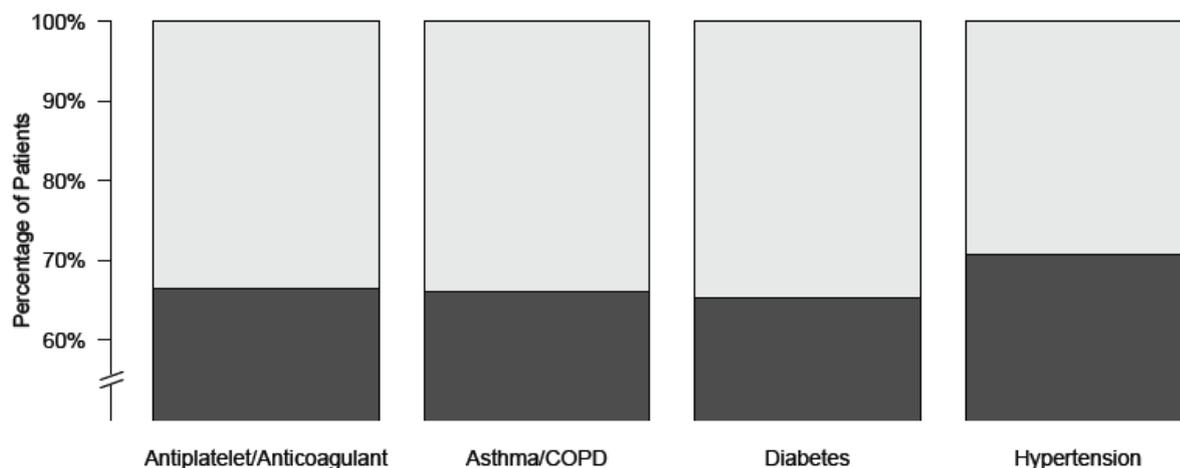
Table 4 - Reasons for not using medicines as prescribed

Reason for not using as prescribed	Number of medicines
Not started the medicine	1642
Prescriber stopped the medicine	1148
Not using as advised	1640
Missed a dose in last 7 days	2410

Effectiveness of the pharmacy intervention at Follow up

Not all patients were able to be followed up with a second appointment, but as noted previously the use of phone contact will have improved data capture for this critical information.

Figure 3 - Intervention Effectiveness by Condition
 Upper/Light = Now adherent after Intervention
 Lower/Dark = Remaining non-adherent after Intervention



The data from the PharmOutcomes cohort recording the NMS activity, examining only those patients who did not withdraw at the Follow up stage, indicates that 36,805 (18.1%) medicines were not being taken as prescribed by 35,249 (18.2%) of patients; that is they were not adherent at the Intervention stage.

The same cohort of patients reported they had become adherent to 11,612 of those medicines by the Follow up stage in 11,243 cases. Expressed as a percentage, this indicates that 31.9% of non-adherent patients

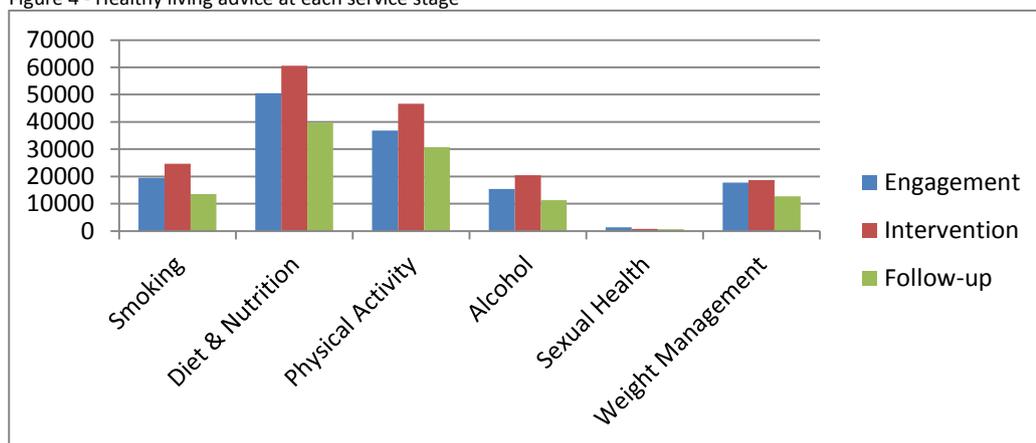
became adherent to 31.5% of their medicines after the pharmacist's intervention.

The rates of adherence change were evaluated dependent upon the condition indicated by the medication, as seen in **Error! Reference source not found.**, which shows the proportion who have changed from non-adherent to adherent at the top and those remaining non-adherent at the bottom.

Healthy living advice

The opportunity to give healthy living advice at the recruitment, Intervention and Follow up stages is a key part of the service. A total of 366,702 separate pieces of advice have been recorded via PharmOutcomes.

Figure 4 - Healthy living advice at each service stage



Examination of the data in Figure 4 indicates that the relative levels of advice given may reflect the time available at each stage of the service, with the levels at Intervention higher than those at recruitment and the levels at recruitment are higher than at Follow up.

Commentary from the notes made by pharmacists

There is a wealth of information provided in the notes that will be of benefit to the Department of Health commissioned evaluation but a very small sample provides some insight into the issues being tackled by the pharmacists providing the service:

Patient prescribed ramipril as well by GP. Did not know which one to take. Called up GP. This was an error and patient should be taking amlodipine.

Taking Bendroflumethiazide 2.5mg at night instead of in the morning as stated on the label.

Patient does not really know if he needs to take the medication. He gets nervous when he sees GP or nurse and he thinks BP goes up. He feels healthy, good diet and exercise.

Patient stopped using this as a result of suffering from flu but resumed using upon counselling

Not taking medication as prescribed - just one tablet daily instead of two. INR had been tested and unchanged. More information given about medicine - food interactions, medicine interactions, time for warfarin to increase INR, what INR is, when to contact clinic, what to do if missed dose, side effects to watch for, patient re-checked time to take medication with me - explained reasons why normally early evening, check anti-coag card given and reminded to carry

Patient has gone back to using some other capsules she found at home, so I asked her to see GP.

Patient was unsure why she had the medicine - had been prescribed as the result of a survey done at the surgery