

Asthma: Transfer of Care around Medicines, Pilot Project

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For The Academic Health Science Network for the North East and North Cumbria

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A mixed methods study was carried out using already collected quantitative data recorded by the pharmacists alongside some semi structured interviews which were carried out by Jon Rees, transcribed and summarised by Ian Smith and interpreted by Jon Rees and Ian Smith.

Results

Quantitative data was received in the form of an excel spreadsheet. Analysis of the data – comparing groups who did and did not attend for review – revealed the following.

Total number of patient records: 295, 226 (76.6%) were not reviewed, 69 (23.4%) were reviewed. Mean age of patients was 43.6 [95%Cl 41.3-46.0] with 114 males (38.6%) and 181 females (61.4%).

There is no association of gender and whether or not review was carried out ($\chi^2(1)$ =.107, p=.33) and the mean ages of those successfully reviewed did not differ from those not successfully reviewed (45.04 years v 43.63 years, t(380) = 0.52, p=.61, d=0.07). There is no difference in successful review rates based on post code of patient ($\chi^2(7)$ =8.86, p=.26).

There are significant differences in review rate based on both referring practice and the pharmacy involved.

Referring Practices

Figure 1 – number of patients reviewed depending on referring practice



There is a significant association between referring practices and whether or not review was successful ($\chi^2(3)=49.08$, p<.001). It appears that Thornfield patients were significantly less likely to be reviewed than average and Benfield Park more likely to be reviewed than average. Review rates for the other two health centres were not significantly different to what was expected.

Pharmacies

There were 10 pharmacies involved and successful rates varied significantly between pharmacies. Breakdown of referrals and successful reviews is shown below

	Number of	Percent of	Number	Percentage
	referrals	referrals	reviewed	success
Boots (Branch: 5008 - Byker) - FDC09	20	6.8	0	0%
Boots (Branch: 5835 - Kenton) - FX474	13	4.4	2	15%
Gill & Schofield Pharmaceutical Chem (Molineux Pharmacy) - FT417	55	18.6	5	9%
Lloyds Pharmacy (Branch: 6224 - Walker) - FQP85	41	13.9	0	0%
St. Anthony's Pharmacy - FE802	122	41.4	26	21%
Walker Pharmacy Limited - FVR13	19	6.4	12	63%
Walkergate Pharmacy - FKV74	19	6.4	19	100%
Asda Pharmacy (Branch: 4419 - Byker) - FFH18	3	1.0	3	100%
Boots (Branch: 5551 - Walker) - FK990	2	.7	2	100%
St. Stevens Pharmacy (Heaton) - FLF74	1	.3	1	100%
Total	295	100.0		

Table 1. Referral and successful review rates by pharmacy

These differences between successful review rates are significant ($\chi^2(9)=121.3$, p<.001). Given the disparity in numbers of referrals to differing pharmacies it is hard to make statistically robust decisions about which ones differ. Repeating the analysis excluding those which received <5 referrals (ASDA Byker, Boots Walker and St Steven's Heaton) still suggests a significant association between pharmacy and successful review and show that Boots Byker and Gill & Schofield reviewed significantly fewer referrals than average whilst Walker Pharmacy and Walkergate Pharmacy review rates were about average for the study.



Figure 2. Successful referral numbers by pharmacy excluding the pharmacies which received <5 referrals

In terms of evaluating the results of the 69 patients who attended the review 21 (33%) were male and 43 (67%) were female. The mean age was 45.5 [95%CI 40.6-50.4]. 26 (38%) were non smokers, 32 (46%) current smokers and 11 (16%) were ex-smokers. 21 (30%) were referred on to the GP and 2 (3%) were asked to be re-reviewed in pharmacy. Reasons given for lack of engagement with GP services are shown in figure 3

Figure 3 Summary of themes as to why people had not engaged with the asthma services



Conclusions

Only limited conclusions can be drawn from this data. There is no obvious effect of age or sex on referral success or on the postcode of origin of the patient. Benfield Park patients appear to have a higher referral success rate but the obvious difference in review rates appear to be between differing pharmacies. It is likely that the effect of differing practices is purely due to the confounding effect of differing practices being associated with differing pharmacies in each geographical area

Qualitative Study

Interviews were held with three different pharmacists about their experience of an advanced medicine use review as part of a transfer of care study for the AHSN. An interview was also held with the lead doctor on the project. The three pharmacists will be referred to as C, R and N. and the doctor as P. The interview centred around two key areas of discussion: the benefits of the pilot with regards to patient experience and the aggravating circumstances that made it difficult to carry out. The themes are presented in the below table with appropriate subcategories and excerpts from the transcript.

There were considerable logistical difficulties in arranging interviews with pharmacy staff due to the workload and time considerations (this is one of the themes which comes out in the interview). A major difficulty was actually contacting pharmacies by telephone and it proved impossible to arrange to interview pharmacists in the apparently worst performing pharmacies in the time frame available.

Table1. Descriptions of	themes and subcategories with app	ropriate statement examples.
Theme	Description	he pilot difficult to conduct
Subcategories	Description	Statement Examples
Time	The time it took to carry out reviews added to an already busy	"It takes times to progressively work through those patients" (C, Pg. 1)
	day.	"The reviews themselves took about twenty minutes give or take" (C, Pg. 2)
		"A normal medicine use review can take ten minutes or so this is once you've gone through using the machine finding out their understanding so twice as long" (R, Pg. 7)
		"If you're just spending five or ten minutes with a patient and you've got ten patients to see that's up to an hour and a half two hours" (N, Pg. 10)
Volume	The number of referrals given at the start of the project was overwhelming for pharmacists.	"They all got dumped on the system at the same time so the whole lot of them got dumped on the system at the start of the project" (C, Pg. 1)
		"The level of referrals based around where we were probably was difficult to get the majority of them done M Pharmacy was at that point third fourth busiest in the country" (C, Pg. 2)
		"We got a cohort of referrals and from them we did do a percentage of them I think it depends on how many referrals we get and how long we have to complete them" (R, Pg. 7)

		"They don't come one at a time" (P, Pg. 13)
Additional Services Services that ran alongside the asthma pilot influenced the ability to carry out this medicine use review.	Services that ran alongside the asthma pilot influenced the ability to carry out this medicine	"We had the smoking cessation side of things on there as well So it's just how you get round to actually do all that" (C, Pg. 2)
	"Some of the things we've got to chase up on a daily basis is phenomenal I'm trying to get round that and get the work done" (C, Pg. 3)	
		"You've got contractual obligations to fulfil you've got other services that you're running" (N, Pg. 9)
		"On top of that flu jabs, morning after pill, smoking cessation we're part of the blood pressure pilot now so there's always something there that's taken a bit of time" (N, Pg. 10)
		"In theory [pharmacists] have capacity to do some clinical work although it seems the landscape might have changed" (P, Pg. 12)
Medicine centred	Issues arose that were predominar	ntly related to medicine and administration of medicine.
Dispensing	Dispensing is a major role in a pharmacist day which detracts from time on other aspects.	"A colossal amount of items, thirty four, thirty five thousand items a month to get through that dispensing" (C, Pg. 2)
		"Our group is probably a higher volume of dispensing then some of the other sites" (C, Pg. 3)

		The way the pharmacy is reimbursed it's sort of heavy burden on dispensing" (C, Pg. 3)	
		"You've got half the team doing the same dispensing work" (N, Pg. 10)	
Shortages	Medicine shortages occurred alongside the pilot.	"When you get hit with a quota the problem being that the quotas, with supply issues they don't take into consideration your volume" C, Pg. 3)	
		"The last 24 months we've had medicine shortages to contend with" (N, Pg. 10)	
Patient Experience	The subsequent subcategories all centred on the patient's role in the service.		
Patient Engagement	The ability to conduct a medicine use review was decided by the patient's willingness to engage.	"Some of them we contacted, numerous contacts and nothing. Some people answered and said they'd come in and didn't" (C, Pg. 2)	
		"Sometimes we weren't able to engage with all of them [children] because the parents might collect their medication when the child was at school" (R, Pg. 4)	
		"They might have only been on their inhalers which they weren't ordering so they weren't coming in to collect anything so we didn't see them at all" (R, Pg. 5)	
		"Around school pick up time the pharmacy is a little busier so potentially they've come in, seen we have a lot of patients and they've said no because they knew they'd have to hang around" (R, Pg. 6)	

		"The system fits quite well, pharmOutcomes is a good platform for referrals" (C, Pg. 4)
Service Appropriateness.	The pilot was seen as appropriate for the pharmacy to carry out.	"This type of service is something that would fit us" (C, Pg. 3)
Service Positives.	The service was viewed positively by the pharmacists across a series of subcategories.	
		"If you're on the phone to somebody to book an appointment there is a likelihood of DNA" (N, Pg. 9)
		"If they DNA here there's less of a consequence of not turning up to an appointment" (N, Pg. 8)
Did not attend	Some patients agreed to a review but then later did not attend.	"When they did engage they were positive on the phone and booked an appointment. And then DNA and I had quite a few others were chasing their tails and ring up trying to reorganise" (N, Pg. 8)
		"We're saying people are not engaging and you've got them there, If you invite them back they might not come back" (P, Pg. 13)
		"There was just some people who we couldn't get a hold of" (N, Pg. 9)
		numbers weren't in service" (N, Pg. 7)
		"From the cohort that was transferred to me that they were the ones that were hard to engage with in the first place They were either uncontactable or the

		"We kind of tied it into the normal medicine use review so we did that alongside the asthma relevance of it and it did take a little bit longer but the benefit kind of
		compensated for that" (R, Pg. 6)
		"The ones that engaged were great it was a fruitful service" (N, Pg. 8)
		"These pilots are great and I think all the pharmacists will engage with them" (N, Pg. 9)
		"The consultation process the actual algorithm going through on PharmOutcomes everything was spot on. Like I said genuinely 100% the feedback was good" (N, Pg. 11)
		"Engaging with pilots I think that's what's been good about the North East we've always been good as an area team" (N, Pg. 12)
		"It ticks a lot of boxes for the pharmacist and it's more convenient potentially for the patients as well" (P, Pg. 14)
Effectiveness	The service was deemed to be rather effective for the patients that engaged with it.	"I think if that engagement hadn't occurred that could have been a considerable risk to life to that patient" (C, Pg. 3)
		"We explained using the steroids long term because it would give them better control, especially in the winter months. Having that a little bit of understanding meant that they had a better grasp of the condition" (R, Pg. 5)

		"Seeing familiar pharmacist there all the time probably helped with engagement" (R, Pg. 7)
		"They've stuck to what was sort of advised et cetera it's been a good service" (N, Pg. 8)
		"It's a different relationship between the patient and the pharmacist than it is beyond the GP people open up and say different things to different people I can be more honest with a pharmacist" (P, Pg. 14)
		"This is not a project that's going to change the world but it may change just highlight some things that might improve things" (P, Pg. 15)
Patient focussed.	The service was positive for the patients that engaged with it.	"Positive from patients, on occasions they didn't realise we could do it" (C, Pg. 3)
		"Some of the patients we did engage with found it really really useful" (R, Pg. 5)
		"I think they felt they had a little more attention paid by me" (N, Pg. 10)
		"I think it was well received, I think a lot of people's perceptions now just listening to comments made they realise that we're geared up and that things are changing and I think that the confidence is there" (N, Pg. 12)

Conclusion

Analysis of the qualitative data suggests a differing view of the involved health care staff to that suggested by the quantitative analysis and reveal a number of factors which influenced the success of the process and also prompt suggestions for the improvement of such services in future. These will be discussed below. In particular it should be noted that the health care staff in general felt this was a successful and useful intervention and that it had gone reasonably well.

Discussion, Conclusion and Recommendations

The data presented here suggest a rather mixed picture of the success of this intervention with some contrasting evidence from the quantitative and qualitative parts of the study. Numerically it appears that the success rate is relatively low and quite different across the different pharmacies involved. However these numbers need to be taken with some caution given the insights learned during the interview. There are a number of factors which suggest the numbers may not be an accurate record of success rate as follows:

- Some of the referred patients never existed or had moved or had incorrect contact information ("ghost patients")
- Some of the patients were involved with GP services and had actually had an asthma review by the time the pharmacy contacted them
- A number of patients sent others to collect prescriptions on their behalf meaning they could not be reviewed (particularly in the case of children)
- Differing pharmacies dealt with / recorded failure to carry out the MUR in different ways this suggests that the very high rate of success in one pharmacy may be an artefact due to removing of the unsuccessful referrals.

All these factors suggest that the numerical information should be treated with caution. In contrast the health care staff interviewed felt the intervention had been relatively successful and they had succeeded in engaging with an already hard to engage group and had made an important clinical difference. Importantly the quality of the interaction with patients was considered good and it was felt that the pharmacy was an appropriate place for such an intervention. Patients appeared to value the review and felt that the pharmacist was an appropriate health care professional to carry it out.

Factors which appear to influence the success of the scheme can be summarised as follows:

- In practice implementation was somewhat different from what was envisaged. All referrals
 occurred at one time (rather than as prescriptions came through) and caused a surge in
 pharmacy workload. Differing pharmacies took different approaches to this some
 proactively booked patients in whilst others waited for prescriptions. This lead to different
 success rates. For those pharmacies who booked patients in advance contacting patients
 could be difficult and time consuming.
- Pharmacy / pharmacist workload was a major issue see themes in table above. Unpredictability was a major issue together with the necessity to keep the dispensing activity running smoothly. Controlled drug dispensing and dealing with drug shortages exacerbated this issue
- Patient factors were also important. Some patients simply refused the intervention whilst for those pharmacies which booked patients in advance the number who simply did not

attend was high. Time of attendance at pharmacy was a major contributor here with patients being unwilling to wait for the pharmacist if busy

- Lack of space for consultation was another factor the availability of only a single consulting room and its use for many other services contributed to waiting time and resulted in a lower success rate.
- On the positive side once approached by a pharmacist in person most patients were very open to the intervention and appeared to value it. All pharmacists interviewed expressed satisfaction with the nature of the intervention and felt it had offered patients a good service and which had "made a difference".

In conclusion it appears that this pilot study has produced a rather mixed picture of success but the overall evaluation suggests the outcome is less gloomy than that given by the numerical data alone. There are probably differences in success rate between pharmacies (though this should be considered carefully in light of the fact that differing pharmacies recorded data in different ways) and this may be related to factors relating to how the pilot was implemented and recorded and also to the issues of pharmacy and patient variables revealed in the qualitative study. Given the nature of an already hard to engage population in a socially deprived area coupled with the workload of the pharmacies involved, the possible inaccuracy of the numerical data and the positive clinical outcomes recorded by the health care professionals involved the picture here should be of a moderately successful and useful pilot study.

The process of evaluation has however led to a number of recommendations which should be considered when planning future interventions – some specific to this pilot but leading to some general suggestions:

- Careful consideration should be given during the planning stage to protocol and ensuring that differing partners in the pilot approach the process in the same way to ensure that outcome data is comparable. Here each pharmacy appeared to undertake the process in a different way.
- Better recording of numerical data clear guidelines as to how various outcomes should be
 recorded would result in more reliable analysis. It is also worthwhile considering at the
 outset what additional data should be recorded in order to allow a full evaluation to be
 carried out. Here for instance simply asking the pharmacist to record the reason why the
 MUR was not successful would result in a far more nuanced and informative report.
- Better and easier communication between partners involved in evaluation would be aided by providing email addresses as well as telephone numbers.
- In general consideration of how a project is going to be evaluated should be considered as a vital part of the planning so that all the required measures can be built in to the process rather than considered after the fact. This will allow maximum value to be obtained from the evaluation process.