The Role and Value of Medicines Management

Annex

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Title: The Role and Value of Medicines Management ANNEX

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I. Contents

Annex A: Work Package 1: Clozapine

Clozapine is an atypical antipsychotic, used for the treatment of resistant psychoses when other therapies have failed (Cadeddu et al., 2015). Clozapine is known for its serious side effects, such as agranulocytosis and cardiac complications (2016). In Derbyshire Clozapine is classified as a Red Drug. Clozapine is only prescribed in secondary care, patients require frequent monitoring (Wehmeier, Heiser, & Remschmidt, 2005), there are a large number of potential drug-drug interactions (2016) and changes in behaviour such as smoking change clozapine concentration (de Leon, 2004). As a consequence, GPs should be aware of those prescribed Clozapine.

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE
Title: Clozapine Drug-Drug interactions
Information about which patients are being prescribed Clozapine by the mental health trust was shared with GP practices, so that GP-held patient records could updated to include this drug (under the Hospital-only prescribed drugs section of the Clinical System). To ensure practice were aware patients on clozapine and to flag up Red Flag interactions on the practice clinical systems. This work is important to ensure that the GP practice has an up to date record of all the medicines that a patient is taking (including those routinely prescribed in secondary care), so that these can be taken into consideration when prescribing other drugs (i.e. looking out for relevant drug-drug interactions) or clinically assessing a patient (e.g. look out for signs of side effects, ensuring adequate monitoring is being done).

Action to be taken locally
In order to help prevent potential drug-drug interaction occurring in the future for patients on Clozapine, the following actions are being taken by specific members of the Medicines Management Team:

- Information about which patients are being prescribed Clozapine by the mental health trust was shared with GP practices, so that GP-held patient records can be updated to include this drug (under the Hospital-only prescribed drugs section of the Clinical System).

Estimated Risk Reduction of Interventions

	Pre	***Post***	
Severity	***4***	***4***	
Likelihood	***(1 to 2 step reduction)***		
Risk	***12-16***	***8-12***	*(Reducing from high to significant)*

A medicines management intervention updating GP-held patient records with details of the prescription of Clozapine is likely to result in a 1 to 2 step reduction in the likelihood of an adverse event. The addition of details of the prescription of Clozapine on the patients record ensures:

1. Adequate patient monitoring is being performed – Neutropenia and potentially fatal agranulocytosis have been reported (Cadeddu et al., 2015). Patient should be monitored regularly (2016). Given that Clozapine should not be prescribed in a primary care setting the likelihood of incorrect monitoring being influenced by the intervention is predicted to be around 1 step (~ 4 points).
2. Potential drug-drug interactions and behaviour change (e.g. smoking cessation) can be considered by prescribers – provides primary care prescribers with knowledge to reduce likelihood of Clozapine toxicity. The intervention will have the greatest influence on this aspect, predicted to reduce the likelihood of an adverse event occurring by 2 steps (approx. 8 points).
3. GP are aware of the prescription in the case of patient presentation with symptoms of infection (e.g. sore throat, fever). As above, likelihood of avoiding adverse events by 2 steps (approx. 8 points).

There is unlikely to be any change in the severity in the event of the occurrence of an adverse event.

Estimated expense / savings

Medicines management pharmacists' reviews of patients' records on average take **15 minutes** per patient review (**£7.50 per patient** @£30 per hour – pharmacist). The greatest cost saving are likely to be derived from a member of the medicines management team updating the patients records, over the GP performing a similar role (see note on the assumption). Given the GP time costs over twice that of the pharmacists, the pharmacist is cheaper while also likely to be able to perform at least as quick (GP - £20 @£80 per hour).

Given the predicted risk reduction from high (>15 points) to significant (8 to 12 points) it is also likely that there will be avoided hospital admissions (Emblin, Nash, & Jefferies, 2016). While occurrences of hospitalisations due to drug-drug interactions have been reported (Cadeddu et al., 2015), the frequency of their occurrence is not clear. Predictions of cost saving of admission avoidance cannot be made, but even a single avoided admission will eclipse the cost of performing the intervention.

Overview of Clozapine SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Clozapine concentrated on interventions recorded under the headings of 'single' and 'multiple'. Single interventions were identified through a free text search, multiple interventions were identified as review: Clozapine.

In 11 weeks 141 interventions were made, taking 35 hours at an estimated cost of £12.50 per patient review. Each interventions resulted in a likely 4 to 8 point risk reduction to the patients. Given the magnitude of the risk reduction and previous published cases of hospital admissions arising from Clozapine drug-drug interactions, admissions are likely to be avoided- even a single admission will exceed the expense of the intervention.

Clozapine

Dates: 20/10/16 to 12/12/16

Clozapine is an atypical antipsychotic, used for the treatment of resistant psychoses when other therapies have failed (Cadeddu et al., 2015). It has potential for serious side effects, such as agranulocytosis and cardiac complications (2016).

This work is important to ensure that the GP practice has an up to date record of all the medicines that a patient is taking (including those routinely prescribed in secondary care), so that these can be taken into consideration when prescribing other drugs (i.e. looking out for relevant drug-drug interactions) or clinically assessing a patient (e.g. look out for signs of side effects, ensuring adequate monitoring is being done).

The intervention was based on medicines safety message issued by Southern Derbyshire Clinical Commissioning Groups Medicines Management team.

Single and Multiple Interventions	**Single:** 2 records (identified free text search)	**Multiple:** 58 records (identified review: clozapine)

Estimated risk reduction:

4 – 8 point reduction

Estimated Cost:

Expense:	£7.50 per patient review
Savings:	£20.00 per patient review (GP)
Net saving per patient:	£12.50 per patient review

Patients (Combined single and multiple interventions)

Identified: 135 Reviewed: 126 Interventions: 141

Time taken:

141 interventions x £7.50 (15 minutes) = £1057.50

Summary:

In 11 weeks 141 interventions were made, taking 35 hours at an estimated cost of £12.50 per patient review. Each interventions resulted in a likely 4 to 8 point risk reduction to the patients. Given the magnitude of the risk reduction and previous published cases of hospital admissions arising from Clozapine drug-drug interactions, admissions are likely to be avoided- even a single admission will exceed the expense of the intervention.

Table 1: *Completeness of Clozapine SharePoint data set.*

Column	*Item*	*Number of complete records*	*%*
A	*Start Date **	*60*	*100%*
B	*South Practice **	*60*	*100%*
C	*Locality **	*60*	*100%*
D	*South Staff **	*60*	*100%*
E	*Task Title:*		
I	*Task Note*		
J	*Est. Cost Saving of Drug (£) annualised **	*0*	*0%*
K	*No. Patients Identified **	*56*	*93%*
L	*No. Patients Reviewed **	*53*	*88%*
M	*No. Patient Interventions made **	*47*	*78%*
N	*Risk Score Excel*	*"No info needed"*	*0%*
O	*Task Completion Date*	*54*	*90%*
P	*Time Taken (mins) **	*60*	*100%*
Q	*Detail Outcome and Comments*	*55*	*92%*
R	*Patients Switched*		
S	*Review (Other) Tasks*		
T	*Task Refused*		
U	*Risk Severity Before Intervention*	*2*	*3%*
V	*Risk Likelihood Before Intervention*	*2*	*3%*
W	*Risk Score Before Intervention*	*60 (all but 2 "0")*	*3%*
X	*Risk Severity After Intervention*	*2*	*3%*
Y	*Risk Likelihood After Intervention*	*2*	*3%*
Z	*Risk Score After Intervention*	*60 (all but 2 "0")*	*3%*
AA	*Risk Reduction*	*60 (all but 2 "0")*	*3%*
AB	*Reduction of Risk Intervention Class*	*0*	*0%*
AC	*Est. Drug Additional Cost (£) annualised **	*0*	*0%*
AD	*Details Potential Outcomes*		
AE	*No. of Prescribers Influenced **		
AF	*Likelihood of Advice Uptake*		
AG	*Potential No. Patients Interventions*		
AH	*Baseline Data*		
AI	*Follow Up Data 6/12*		
AJ	*Estimated Time Saving(minutes)*		
AK	*Estimated Time Saving Group*		
AL	*Number Reduced DN Visits*		
AM	*Reduced Number of Appointment*		
AN	*Reduced Number of Appointment Group*		
AO	*Task Title*		
AP	*CTID*		
AQ	*[ContentType].CreateItem.[Create.ID]*		
AR	*SDCCG Values*		
AS	*Archive*		
AT	*MonthGroup*		
AU	*YearMoGroup*		
AV	*GP-Estimated Time Saving(minutes)*	*8*	*13%*
AW	*Clinical Pharmacist-Estimated Time Saving(minutes)*	*4*	*7%*
AX	*Nurse-Estimated Time Saving(minutes)*	*3*	*5%*
AY	*GUIDIdentifier*		
AZ	*[CCG.MedManSouthlogGUID].CreateItem.[Create]*		
BA	*Title*		
BB	*Reduced Number of GP Appointments*	*3*	*5%*
BC	*Reduced Number of Nurse Appointments*	*3*	*5%*
BD	*Reduced Number of Admin Appointments*	*0*	*0%*
BE	*Reduced Number of Clinical Pharmacist Appointments*	*3*	*5%*
BF	*If Other, please state.*		
BG	*Specific NNT's*	*0*	*0%*
BH	*Admin-Estimated Time Saving(minutes)*	*6*	*10%*
BI	*Reduced Number District Nurse visit*	*0*	*0%*

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from Clozapine Dataset

- Detailed outcome and comments are well recorded, however, the dataset contains a large number of incomplete records (see **Table 1**).

  Recommendation: Simplify the SharePoint data set. It may be possible to combine single and multiple intervention sheet. The addition of a SharePoint sheet for the recording interventions made based on Medicines Safety Message would also allow for the inclusions of auto-populating cells, based on pre-calculated estimations of risk reduction, expenses and cost saving.

- There are a number of items that have been recorded as intervention made, when in fact there has been no intervention. "For the purpose of SharePoint Intervention is defined as: *"Input provided to change the course of action/improve a situation. It should lead directly to a patient-related outcome"* (JAS, Report SharePoint Site for MM team, 13/05/16). This has resulted in a greater number of interventions being recorded than patients identified and reviewed.

  Recommendation: Include a brief definition of intervention with tick box or number to indicate when an intervention has been made.

- Clozapine is the only item in this review that has a risk score pre-calculated. Contained within the excel document "outcome costing 16-17":

Task	Harm risk before			Harm risk after			Risk reduction score
	Severity	Likelyhood	Risk Score	Severity	Likelyhood	Risk Score	
Clozapine	4	4	12	4	3	8	4
Adrenaline pens			0			0	

  Recommendation: All interventions that are based on Medicine Safety Message, or other communicated directive, have a risk score calculated centrally by the medicines management team. This is then applied posthoc onto the dataset.

  - Removes issues with inter- and intra-rater reliability;
  - Reduces demands placed on medicines management team;
  - Some may be under-reported, others over, but across the population there will be error in any case.

  See example medicines safety message (page 4)

- Estimated time savings are inconsistently recorded, or it is unclear whether they were omitted.

  Recommendation: All interventions that are based on Medicine Safety Message, or other communicated directive, have an estimated time saving calculated centrally by the medicines management team. This is then applied posthoc onto the dataset.

  - Simplifies data entry for medicines management team.
  - Can also take into account the time saved for other clinical staff performing searches – e.g. GP, member of the medicines management team are likely to be able to perform the search and intervention faster, easier and for a lower cost (£30 ph. Vs. £80 ph.).

  See example medicines safety message (page 4)

Annex B: Work Package 1: Adrenaline

Anaphylaxis is a severe, life-threatening systemic reaction that can affect individuals of all ages (McLean-Tooke, Bethune, Fay, & Spickett, 2003). Intramuscular adrenaline is the first line treatment for anaphylaxis. The administration of adrenaline increases peripheral vascular resistance bringing about improved blood pressure and coronary perfusion, reverses peripheral vasodilation, decreases angioedema, causes bronchodilation and reduces the release of inflammatory mediators (Brown, 1998). While there is disagreement about the recommended dose of adrenaline (McLean-Tooke et al., 2003), dosing information is provided in the BNF for patients above and below 30 kg (2016). Failure to update the dose of pen supplied may result in patients receiving a sub-therapeutic dose.

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE

Title: Incorrect strength of Adrenaline pen on repeat prescription

A 15-year-old patient was found to have a paediatric dose (150micrograms – Epipen JR) Adrenaline pen prescribed on their repeat prescriptions. The patient should have been prescribed the higher strength (300micrograms) pen instead. The BNF (2016) provides dosing information for use of Adrenaline pens (Brands include: Emerade®, Epipen®, Jext®) according to patient weight as per table below:

Patient weight	***Dose/Product for use***
Up to 30kg	***Emerade® 150micrograms, Epipen JR®, Jext® 150micrograms®***
≥ 30kg	***Emerade® 300micrograms or 500micrograms, Epipen®, Jext® 300micrograms***

Action to be taken locally

In order to help prevent such incidents from occurring again in the future, the following actions are being taken by specific members of the Medicines Management Team:

> A 'Formulary Message' is to be added to all Adrenaline pen brands within the System One e-prescribing system to make it clearer as to which strength of pen is to be selected according to patient weight (as per table above). This information will also appear in the dose section of the prescription along with advice about how the adrenaline should be administered e.g. for patients weighing up to 30kg. Use as directed. Inject into the outer thigh.

Action by: Temi & Formulary group looking at System One updates.

> Dose/strength of Adrenaline pen supplied to patients is also going to be added to regular (Quarterly or 6 monthly) 'Safety searches' which will be carried out by the Medicines Management Team. The aim of the safety search will be to ensure that patients are being supplied the correct strength of Adrenaline pen according to their body weight.

Action by: Morag & 'Safety searches' team – for subsequent searches to be carried out by the MMT at GP practices on a regular basis (e.g. Quarterly or 6 monthly – yet to be determined).

Estimated Risk Reduction of interventions

	Pre	***Post***	
Severity	***3-4***	***1-2***	
Likelihood	***(2 step reduction)***		
Risk	***12-16***	***4-12***	*(Reducing from high to significant / moderate risk)*

A medicines management intervention of safety searches to ensure that patients are being supplied with the correct strength Adrenaline Pen according to their body weight is likely to result in a 2 step reduction in the likelihood of an adverse event occurring. The intervention ensures that:

1. Patients receive the correct strength of adrenaline pen according to patient weight
2. Existing patients are updated to the correct strength adrenaline pen according to patient weight

Estimated expenses / savings

Medicines management pharmacists' reviews of patients' records on average take **2 minutes to identify and review patients and a further 13 minutes** if an intervention is necessary (**£1 to £6.50 per patient** @£30 per hour – pharmacist). The greatest cost saving are likely to be derived from a member of the medicines management team updating the patients records, over the GP performing a similar role (see note on the assumption). Given the GP time costs over twice that of the pharmacists, the pharmacist is cheaper while also likely to be able to perform at least as quickly (GP @£80 per hour).

Time to 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Given the predicted risk reduction from high (>15 points) to significant risk (8 to 12 points) it is also likely that there will be avoided hospital admissions (Emblin et al., 2016). While occurrences of adverse event and hospitalisations due to patients receiving subtherapeutic dose of adrenaline, the frequency of their occurrence is not clear. Predictions of cost saving of admission avoidance cannot be made, but even a single avoided admission will outweigh the cost of performing the intervention.

Overview of Adrenaline SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Adrenaline concentrated on interventions recorded under the headings of 'single' and 'multiple', along with 'influence' interventions . Interventions were identified through free-text search of the SharePoint data set, with further screening to remove records relating to switches and out of stock records.

In 31 weeks 266 interventions were made, taking 93.6 hours to identify and make the interventions at an estimated cost of £7.50 per patient (review and intervention). Each interventions resulted in a likely 4 to 8 point risk reduction to the patients. There is little-published evidence of the likelihood of adverse consequences of a patient receiving a sub-therapeutic dose of Adrenaline. However, given the magnitude of the risk reduction occurring through ensuring that patients do not receive a sub-therapeutic dose of adrenaline in the case of anaphylaxis it is likely that there will be significant benefit to patient health. Secondly, to summarise the influence intervention, there have been three records made concerning the implementation of the protocol to alert prescribers to weight vs. strength. It appears from the records that only a small number of the prescribers have been reached. The likelihood of the advice uptake is also of limited use as there is no follow up information.

Adrenaline

Dates: 17/04/16 to 17/11/16

Anaphylaxis is a severe, life-threatening systemic reaction that can affect individuals of all ages (McLean-Tooke et al., 2003). Intramuscular adrenaline is the first line treatment for anaphylaxis. While there is disagreement about the recommended dose of adrenaline (McLean-Tooke et al., 2003), dosing information is provided in the BNF for patients above and below 30kg (2016). Failure to update the dose of pen supplied may result in patients receiving a sub-therapeutic dose.

All patients prescribed adrenaline auto-injector pens checked to ensure that they are on the correct strength according to their weight. This was undertaken on the back of an incident that was reported, whereby a patient was prescribed a lower strength (150microg) of adrenaline instead of the higher strength (300microg) – according to their most current weight.

Single and Multiple	**Single:** 29 records	**Multiple:** 66 records

	(identified free text search)	(identified free text search)
Estimated risk reduction:	**Estimated Cost:**	
4 – 8 point reduction	Expense:	£1.00 per patient review
		£6.50 per patient intervention
	Savings:	£2.60 per patient review (GP)
		£16.90 per patient intervention (GP)
	Net saving per patient:	£1.60 per patient review
		£10.40 per patient intervention

Patients (Combined single and multiple interventions)

Identified: 1442 Reviewed: 1353 Interventions: 224

Time taken:

1353 reviewed x 2 minutes = £1353

224 interventions x 13 minutes = £1456

Summary:

In 31 weeks 266 interventions were made, taking 93.6 hours to identify and make the interventions at an estimated cost of £7.50 per patient (review and intervention). Each interventions resulted in a likely 4 to 8 point risk reduction to the patients. There is little-published evidence of the likelihood of adverse consequences of a patient receiving a sub-therapeutic dose of Adrenaline. However, given the magnitude of the risk reduction occurring through ensuring that patients do not receive a sub-therapeutic dose of adrenaline in the case of anaphylaxis it is likely that there will be significant benefit to patient health.

Influence Interventions ***3 records***
Prescribers Influences: ***31***
Likelihood of advice uptake: ***8.3 / 10***
Time Taken: ***95 minutes Estimated cost @ £30 ph. = £45***
Notes:
Unclear of practices where influence intervention implemented. The number of prescribers influenced is much lower than total prescribers.

Time to 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Summary:
There have been three records made concerning the implementation of the protocol to alert prescribers to weight vs. strength. It appears from the records that only a small number of the prescribers have been reached. The likelihood of the advice uptake is also of limited use as there is no follow up information.

Table 2: *Completeness of Adrenaline SharePoint data set.*

Column	Item	Number of complete records	%
A	Start Date *	95	100%
B	South Practice *	95	100%
C	Locality *	95	100%
D	South Staff *	94	100%
E	Task Title:	95	100%
I	Task Note	95	100%
J	Est. Cost Saving of Drug (£) annualised *	0	0%
K	No. Patients Identified *	65	68%
L	No. Patients Reviewed *	64	67%
M	No. Patient Interventions made *	65	68%
N	Risk Score Excel	65 "No Info Needed"	68%
O	Task Completion Date	89	94%
P	Time Taken (mins) *	95	100%
Q	Detail Outcome and Comments	92	97%
R	Patients Switched	0	0%
S	Review (Other) Tasks	0	0%
T	Task Refused	66 "False"	69%
U	Risk Severity Before Intervention	17	18%
V	Risk Likelihood Before Intervention	17	18%
W	Risk Score Before Intervention	81 (Most "0")	85%
X	Risk Severity After Intervention	15	16%
Y	Risk Likelihood After Intervention	15	16%
Z	Risk Score After Intervention	79 (Most "0")	83%
AA	Risk Reduction	80 (Most "0")	84%
AB	Reduction of Risk Intervention Class	12 "other"	13%
AC	Est. Drug Additional Cost (£) annualised *	31 (1 record)	33%
AD	Details Potential Outcomes	0	0%
AE	No. of Prescribers Influenced *	0	0%
AF	Likelihood of Advice Uptake	0	0%
AG	Potential No. Patients Interventions	0	0%
AH	Baseline Data	0	0%
AI	Follow Up Data 6/12	0	0%
AJ	Estimated Time Saving(minutes)	0	0%
AK	Estimated Time Saving Group	0	0%
AL	Number Reduced DN Visits	0	0%
AM	Reduced Number of Appointment	0	0%
AN	Reduced Number of Appointment Group	0	0%
AO	Task Title	0	0%
AP	CTID	0	0%
AQ	[ContentType].CreateItem.[Create.ID]	5 "5"	5%
AR	SDCCG Values	71	75%
AS	Archive	95 "No"	100%
AT	MonthGroup	95	100%
AU	YearMoGroup	95	100%
AV	GP-Estimated Time Saving(minutes)	18	19%
AW	Clinical Pharmacist-Estimated Time Saving(minutes)	13	14%
AX	Nurse-Estimated Time Saving(minutes)	5	5%
AY	GUIDIdentifier	95	100%
AZ	[CCG.MedManSouthlogGUID].CreateItem.[Create]	5	5%
BA	Title	95	100%
BB	Reduced Number of GP Appointments	2	2%
BC	Reduced Number of Nurse Appointments	2	2%
BD	Reduced Number of Admin Appointments	0	0%
BE	Reduced Number of Clinical Pharmacist Appointments	3	3%
BF	If Other, please state.	12	13%
BG	Specific NNT's	0	0%
BH	Admin-Estimated Time Saving(minutes)	7	7%
BI	Reduced Number District Nurse visit	0	0%

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from Adrenaline Dataset

Fewer than 70% of records contain information on the number of patients identified, reviewed and interventions made. These should be compulsory fields, but data does not appear to be being entered, or recorded correctly.

Recommendation: a) ensure that fields on the SharePoint site for entering the number of patients identified are compulsory. b) Ensure that users of the SharePoint site are clear on the definition of an intervention, it may be pertinent to include this on the data entry form.

Risk stratification is only completed for the single interventions, there are no recorded data for the multiple interventions. It appears that the risk stratification for multiple interventions is intended to be completed posthoc, entered from a separate spreadsheet, this has not been completed.

> ***Recommendation:*** *All interventions that are based on Medicine Safety Message, or other communicated directive, have a risk score calculated centrally by the medicines management team. This is then applied posthoc onto the dataset.*
>
> - *Removes issues with inter and intra-rater reliability;*
> - *Reduces demands placed on med man team;*
> - *Some may be under-reported, others over, but across sample there will be error in any case.*
>
> See example medicines safety message (page 4)

Fewer than 20% of records have information on potential time savings. It is unclear whether this represents no time saving, or data which was not entered.

> ***Recommendation:*** *All interventions that are based on Medicine Safety Message, or other communicated directive, have an estimated time saving calculated centrally by the medicines management team. This is then applied posthoc onto the dataset.*
>
> - *Simplifies data entry for medicines management team.*
> - *Can also take into account the time saved for other clinical staff performing searches – e.g. GP, member of the medicines management team are likely to be able to perform the search and intervention faster, easier and for a lower cost (£30 ph. Vs. £80 ph.).*
>
> *See example medicines safety message (page 4)*

Records in multiple with single patients identified, and vice versa.

> ***Recommendation:*** *Have a single sheet for the recording of single and multiple interventions with a simpler form.*

The influence intervention appears incomplete. It is unclear from the way that the interventions are recorded whether all relevant persons have been 'influenced'.

> ***Recommendation:*** *Record influence interventions in such a way as it is possible to determine the number of prescribers who have been influenced as a proportion of the total prescribers.*

There is no follow-up to the influence intervention.

> ***Recommendations:*** *As above. Record influence interventions in such a way as it is possible to determine the implementation, testing and any follow-ups to each intervention.*

Annex C: Work Package 1: Azithromycin

Incorrect medicine dosages are an important source of iatrogenic illness (Keers, Williams, Cooke, & Ashcroft, 2013). Incidents involving medicines were the third largest group that resulted in a patient safety incident, with 10.9% of all incidents reported by community trusts, after patient accidents and implementation of care (NRLS, 2016). A study by Avery et al. (2012) investigated the prevalence, nature and causes of prescribing and monitoring errors made by general practitioners. Prescribing or monitoring errors were relatively common and were detected in 1 in 8 patients, and involved around 1 in 20 of all prescriptions. The most common source of errors in prescribing Incomplete information on prescription 31.2%, dose/strength errors 17.4% and timing errors 10.5% (Avery et al., 2012). The severity of the 302 reported errors was judged on a validated 0-10 scale (0 = no risk of harm; 10=death):128 (42.4%) were deemed to be minor; 163 (54.0%) moderate; and 11 (3.6%) severe. Considered together, 0.18% of all prescriptions (11/6048, or one in 550) were associated with severe error.

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE

Title: Incorrect dose of Azithromycin

An incident has occurred whereby a patient being treated for recurrent respiratory tract infections was prescribed an incorrect dose of azithromycin, which occurred due to the incorrect dose being typed in a clinic letter at a hospital & the incorrect dose was not identified by the GP upon receiving the letter, thus leading to the patient being prescribed & dispensed the incorrect dose. A full root cause analysis (RCA) investigation of this incident is currently underway; including the hospital, CCG & community pharmacy involved. Incorrect dosing of azithromycin in this case, has resulted in a patient losing their hearing, which is likely to be permanent.

Intended dose = Azithromycin 500mg to be taken 3 times a week (Monday, Wednesday, Friday)
Dose prescribed = Azithromycin 500mg to be taken 3 times a day (Monday, Wednesday, Friday)

Action to be taken locally

In order to help prevent such incidents from occurring again in the future, the following actions are being taken by specific members of the Medicines Management Team:

The CCG where this incident occurred have suggested that e-prescribing systems are updated to include an alert (such as a 'protocol' for System One) to highlight that long-term daily doses of more than 250mg are queried before proceeding any further. We are looking into the best wording for this alert before uploading onto System One locally. Also, we are looking into updating the Bronchiectasis guidelines to include some information about possible use of prophylactic antibiotics, with a link to doses usually seen in these cases.

Identification of existing patients. Dose and frequency of Azithromycin supplied to patients is also going to be added to regular (Quarterly or 6 monthly) 'Safety searches' which will be carried out by the Medicines Management Team. The aim of the safety search will be to ensure that patients are being supplied Azithromycin at the correct dose and frequency. [This was not present in the original medicines safety message and is presented as an example].

Estimated Risk Reduction of interventions

	Pre	*Post*	
Severity 4	***1***		
Likelihood	***3-4***	***1***	
Risk	***12-16***	***1***	***(Reducing from high risk to low risk)***

A medicines management intervention of the introduction of daily doses of more than 250mg is likely to result in the risk of an incorrect dose of Azithromycin being prescribed to reduce to a negligible level. Further

safety searches will also ensure that all patients currently being prescribed Azithromycin have the correct dose at the correct frequency. The intervention ensures that:

Existing patients are updated to the correct dose of Azithromycin.

Future patients receive the correct dose of Azithromycin.

There are no published incidents of an incorrect dose of azithromycin resulting in adults, there are a number of cases in children (Rivers, 2013; Valdés et al., 2017). The occurrence the medicines safety message is based on highlights the potential for harm of an incorrect dose of Azithromycin.

Estimated expenses / savings

Medicines management pharmacists' reviews of patients' records on average take 2 minutes to identify and review patients and a further 13 minutes if an intervention is necessary (£1 to £6.50 per patient @£30 per hour – pharmacist). The greatest cost saving are likely to be derived from a member of the medicines management team updating the patients records, over the GP performing a similar role (see note on the assumption of best practice). Given the GP time costs over twice that of the pharmacists, the pharmacist is cheaper while also likely to be able to perform at least as quickly (GP - £2.60 to £16.90 per patient @£80 per hour).

The cost to set up the protocol in System One e-prescribing alert across the 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Given the predicted risk reduction from high (>15 points) to low risk (1 point) it is also likely that there will be avoided adverse events, and possibly hospital admissions (Emblin et al., 2016). While occurrences of hospitalisations due to incorrect dose do occur, as evidenced by the patient incident which initiated the medicine safety message, the likelihood of hospitalisation in the case of an overdose is not clear as there are no other published cases. Predictions of cost saving of admission avoidance cannot be made, but even a single avoided admission will eclipse the cost of performing the intervention.

Overview of Azithromycin SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Azithromycin concentrated on 'influence' interventions. Influence interventions were identified through a free text search of the task notes.

The influence intervention resulted in 34 records made concerning the implementation of the protocol to alert prescribers to the correct dose of Azithromycin. It appears from the records that 97, of an unknown total number of prescribers, had been influenced. The likelihood of the advice uptake was reported as 8.8 of 10, however this is also of limited use as there is no follow up information. Secondly, in the 33 weeks 94 patients were identified and reviewed and 3 interventions were made, taking 4.25 hours to identify and make the interventions at an estimated cost of £7.50 per patient (review and intervention). Each interventions resulted in reduction in risk to the patients to a low or very low level. Given the magnitude of the risk reduction occurring through ensuring that patients receive the correct dose of Azithromycin there are also likely to be further significant savings associated with avoided admissions, however, there is no published evidence to base financial assumptions on. Even a single avoided admission will outweigh the low cost of the intervention.

Azithromycin ***Dates: 19/04/16 to 08/12/16***

Interventions were based on March 2016 medicine safety message Annex G

An incident has occurred whereby a patient being treated for recurrent respiratory tract infections was prescribed an incorrect dose of azithromycin, which occurred due to the incorrect dose being typed in a clinic letter at a hospital & the incorrect dose was not identified by the GP upon receiving the letter, thus leading to the patient being prescribed & dispensed the incorrect dose.

Action to be taken locally: The CCG where this incident occurred have suggested that e-prescribing systems are updated to include an alert (such as a 'protocol' for System One) to highlight that long-term daily doses of more than 250mg are queried before proceeding any further.

Influence Interventions	***34 records (between 23/05/16 and 28/10/16)***
Prescribers Influences:	***97***
Likelihood of advice uptake:	***8.8 (no follow-up)***
Time Taken:	***360 minutes Est cost @ £30 ph. = £180***

Notes:
No follow up. Likelihood of advice uptake only recorded for one record.

The cost to set up the protocol in System One e-prescribing alert across the 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Summary:
The influence intervention resulted in 34 records made concerning the implementation of the protocol to alert prescribers to the correct dose of Azithromycin. It appears from the records that 97, of an unknown total number of prescribers had been influenced. The likelihood of the advice uptake was reported as 8.8 of 10, however this is also of limited use as there is no follow up information.

While there was no call for single or multiple interventions to made highlighted on the original medicines safety message the following 11 multiple interventions were recorded in the SharePoint data set and are presented as an example. Ad-hoc or patient query interventions haven been removed, the remaining are based on MHRA Alert and medication safety message.

Single and Multiple	***Single: 0 records (identified from 'task notes' [I])***	***Multiple: 11 records (identified from 'task notes' [I])***

Estimated risk reduction:
15 – 19 point reduction

Estimated Cost:

Expense:	***£1 review***
	£6.50 intervention
Savings:	***£2.60 review (GP)***
	£16.90 intervention (GP)
Net per patient:	***£1.60 review***
	£10.40 intervention

Patients (Combined single and multiple interventions)

Identified: 94	***Reviewed: 94***	***Interventions: 3***

Time taken:
94 reviews x £1 = £94
3 interventions x £7.50 = £22.50

Summary:

In the 33 weeks 94 patients were identified and reviewed and 3 interventions were made, taking 4.25 hours to identify and make the interventions at an estimated cost of £7.50 per patient (review and intervention). Each interventions resulted in reduction in risk to the patients to a low or very low level. Given the magnitude of the risk reduction occurring through ensuring that patients receive the correct dose of Azithromycin there are also likely to be further significant savings associated with avoided admissions, however, there is no published evidence to base financial assumptions on. Even a single avoided admission will outweigh the low cost of the intervention.

Table 3: *Completeness of Azithromycin SharePoint data set.*

Column	Item	Number of complete records	%
A	Start Date *	34	100%
B	South Practice *	34	100%
C	Locality *	34	100%
D	South Staff *	33	97%
E	Task Title:		
I	Task Note	34	100%
J	Est. Cost Saving of Drug (£) annualised *	0	
K	No. Patients Identified *		
L	No. Patients Reviewed *		
M	No. Patient Interventions made *	34 (all "0")	100%
N	Risk Score Excel		
O	Task Completion Date	34	100%
P	Time Taken (mins) *	34	100%
Q	Detail Outcome and Comments	33	97%
R	Patients Switched		
S	Review (Other) Tasks		
T	Task Refused		
U	Risk Severity Before Intervention		
V	Risk Likelihood Before Intervention		
W	Risk Score Before Intervention		
X	Risk Severity After Intervention		
Y	Risk Likelihood After Intervention		
Z	Risk Score After Intervention		
AA AB	Risk Reduction Reduction of Risk Intervention Class		
AC	Est. Drug Additional Cost (£) annualised *		
AD	Details Potential Outcomes		
AE	No. of Prescribers Influenced *	15	44%
AF	Likelihood of Advice Uptake	5	15%
AG	Potential No. Patients Interventions		
AH	Baseline Data	0	0%
AI	Follow Up Data 6/12	0	0%
AJ	Estimated Time Saving(minutes)		
AK	Estimated Time Saving Group		
AL	Number Reduced DN Visits		
AM	Reduced Number of Appointment		
AN	Reduced Number of Appointment Group		
AO	Task Title		
AP	CTID		
AQ AR	[ContentType].CreateItem.[Create.ID] SDCCG Values		
AS	Archive		
AT	MonthGroup		
AU	YearMoGroup		
AV	GP-Estimated Time Saving(minutes)	0	0%
AW	Clinical Pharmacist-Estimated Time Saving(minutes)	0	0%
AX	Nurse-Estimated Time Saving(minutes)	0	0%
AY	GUIDIdentifier		
AZ	[CCG.MedManSouthlogGUID].CreateItem.[Create]		
BA	Title		
BB	Reduced Number of GP Appointments	0	0%
BC	Reduced Number of Nurse Appointments	0	0%
BD	Reduced Number of Admin Appointments	0	0%
BE	Reduced Number of Clinical Pharmacist Appointments	0	0%
BF BG	If Other, please state. Specific NNT's		
BH	Admin-Estimated Time Saving(minutes)		
BI	Reduced Number District Nurse visit		

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from Azithromycin Dataset

There was no intervention on exploring existing prescriptions on the medicines safety message. The analysis was conducted on the records that were present in the dataset.

> ***Recommendation:*** *Both current and future patients should be explicitly written into the medicine safety messages. While it would appear that a number of interventions were conducted, they are not as extensive as those completed for other interventions, such as Adrenaline or Clozapine*

The key learning points for the Azithromycin single and multiple interventions dataset are the same as those presented for the Key Points of Learning from Clozapine Dataset of (the reader is referred to page 8).

For the influence intervention the following points should be considered:

IT influence interventions are recorded in parallel, it is hard to ascertain the initial intervention vs. follow-ups that occur.

> ***Recommendation:*** *Influence interventions are recorded in such a way as it is possible to ascertain the uptake of advice and issues that arise.*

IT interventions have only the initial likelihood of advice uptake, it is unclear how the values of advice uptake are calculated.

- Only 44% record the number of prescribers influenced
- Only 15% of records have information on the likelihood of advice uptake.

> ***Recommendations:*** *As above. Record influence interventions in such a way as it is possible to determine the implementation, testing and any follow-ups to each intervention.*

The influence intervention appears incomplete. It is unclear from the way that the interventions are recorded whether all relevant persons have been 'influenced'.

> ***Recommendation:*** *Record influence interventions in such a way as it is possible to determine the number of prescribers who have been influenced as a proportion of the total prescribers.*

Annex D: Work Package 1: Clostridium Difficile

Clostridium Difficile is the most common healthcare associated infection in England. While the number of cases reported has decreased considerably over the past 10 years, there were still a total of 14139 cases reported in 2015/2016 (HRA, 2016). Importantly, the use of board spectrum antibiotics is associated with increased incidence of Clostridium Difficile infection (Bartlett, Chang, Gurwith, Gorbach, & Onderdonk, 1978; Davey et al., 2013; Davey et al., 2017; Garey et al., 2008). Few data are available on the reoccurrence of Clostridium Difficile in patients in a community setting, however, in a hospital setting the rates are around 20% after the first episode and 45 – 60% after the second episode (NICE). A Cochrane review (Davey et al., 2017) found that restricting the use of broad-spectrum antibiotics can reduce Clostridium Difficile infection (only two studies had a low-risk bias). There is potential if prescribers are unaware of patients history of Clostridium Difficile that they may prescribe broad-spectrum antibiotics, including but not limited to clindamycin, cephalosporin (in particular second‐ and third‐generation cephalosporin), quinolones, co‐amoxiclav and aminopenicillins (NICE).

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE

Title: Broad-spectrum antibiotics and patients with history of Clostridium Difficile

There is a potential risk that patients with a history of Clostridium Difficile infection may be prescribed antibiotics or Loperamide, which are known to cause or increase the risk of further Clostridium Difficile infections – especially if the patient is not known to the prescriber.

This work was carried out to help reduce the risk of Clostridium Difficile in patients who have previously had Clostridium Difficile. Also, to alert prescribers to the risk of using broad-spectrum antibiotics in these patients (nudging them to use more narrow-spectrum antibiotics).

Action to be taken locally:

In order to help prevent such incidents from occurring again in the future, the following actions are being taken by specific members of the Medicines Management Team:

- 'Protocol' to be set up in System One e-prescribing to alert prescribers to a patient with a documented history of Clostridium Difficile infection when prescribing any of the following drugs & prompting them to refer to the relevant Antibiotic prescribing guidelines or Clostridium Difficile guidelines if prescribing cephalosporins, clindamycin, co-amoxiclav, quinolones or loperamide.
- In order for this action & 'protocol' to function successfully, GP practices need to ensure that patients with a history Clostridium Difficile infection are coded appropriately within their e-prescribing system.

Estimated Risk Reduction:

	Pre	***Post***	
Severity	***3-4***	***3-4***	
Likelihood	***4***	***2-3***	***(1 to 2 step reduction)***
Risk	***12-16***	***6-12***	***(Reducing from high risk to moderate or significant risk)***

A medicines management intervention alerting prescribers to a patient with a documented history of Clostridium Difficulties infection when prescribing cephalosporins, clindamycin, co-amoxiclav, quinolones or loperamide is likely to result in a 1 to 2 step reduction in the likelihood of an adverse event. There is unlikely to be any change in the severity in the event of the occurrence of an adverse event.

Estimated expense / savings
The cost to set up the protocol in System One e-prescribing alert across the 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Given the predicted risk reduction from extreme (>15 points) to high risk (8 to 12 points) it is also likely that there will be avoided hospital admissions (Emblin et al.). While occurrences of hospitalisations due to Clostridium Difficile infections occurring in a hospital setting are lacking data, predictions of cost saving of admission avoidance cannot be made, but even a single avoided admission will eclipse the cost of performing the influence intervention.

Overview of Clostridium Difficile SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Clostridium Difficile concentrated on 'influence' interventions. Influence interventions were identified through a free text search of the task notes.

The influence intervention resulted in 9 records made concerning the implementation of the protocol to alert prescribers to patients with a history of Clostridium Difficile infection. It appears from the records that 30, of an unknown total number of prescribers, had been influenced. The likelihood of the advice uptake was reported as 8.25 of 10, however this is also of limited use as there is no follow up information.

Clostridium Difficile ***Dates: 24/05/16 to 28/10/17***
There is a potential risk that patients with a history of Clostridium Difficile infection may be prescribed antibiotics or Loperamide, which are known to cause or increase the risk of further Clostridium Difficile infections – especially if the patient is not known to the prescriber.

Protocol produced for & uploaded onto Clinical Systems to highlight to prescribers when they prescribe broad-spectrum antibiotics in a patient with a history of Clostridium Difficile. Medicines Management Team members checked to ensure all the practices have had this put in place.

Influence Interventions	***9 records***
Prescribers Influences:	***30***
Likelihood of advice uptake:	***8.25 (no follow-up)***
Time Taken:	***70 minutes Est cost @ £30 ph. = £35***

Notes:
No follow up.
Time to 55 practices is likely to be minimal. Taking at most five minutes per practice, with a total time of around 5 hours, or £150 (@£30 per hour – pharmacist).

Summary:

The influence intervention resulted in 9 records made concerning the implementation of the protocol to alert prescribers to patients with a history of Clostridium Difficile infection. It appears from the records that 30, of an unknown total number of prescribers had been influenced. The likelihood of the advice uptake was reported as 8.25 of 10, however this is also of limited use as there is no follow up information.

Table 4: *Completeness of Clostridium Difficile SharePoint data set.*

Column	Item	Number of complete records	%
A	Start Date *	9	100%
B	South Practice *	9	100%
C	Locality *	9	100%
D	South Staff *	9	100%
E	Task Title:		
I	Task Note	9	100%
J	Est. Cost Saving of Drug (£) annualised *		
K	No. Patients Identified *		
L	No. Patients Reviewed *		
M	No. Patient Interventions made *	0	0%
N	Risk Score Excel		
O	Task Completion Date	9	100%
P	Time Taken (mins) *	9	100%
Q	Detail Outcome and Comments	8	89%
R	Patients Switched		
S	Review (Other) Tasks		
T	Task Refused		
U	Risk Severity Before Intervention		
V	Risk Likelihood Before Intervention		
W	Risk Score Before Intervention		
X	Risk Severity After Intervention		
Y	Risk Likelihood After Intervention		
Z	Risk Score After Intervention		
AA AB	Risk Reduction Reduction of Risk Intervention Class		
AC	Est. Drug Additional Cost (£) annualised *		
AD	Details Potential Outcomes		
AE	No. of Prescribers Influenced *	5	55%
AF	Likelihood of Advice Uptake	4	44%
AG	Potential No. Patients Interventions		
AH	Baseline Data	0	0%
AI	Follow Up Data 6/12	0	0%
AJ	Estimated Time Saving(minutes)		
AK	Estimated Time Saving Group		
AL	Number Reduced DN Visits		
AM	Reduced Number of Appointment		
AN	Reduced Number of Appointment Group		
AO	Task Title		
AP	CTID		
AQ AR	[ContentType].CreateItem.[Create.ID] SDCCG Values		
AS	Archive		
AT	MonthGroup		
AU	YearMoGroup		
AV	GP-Estimated Time Saving(minutes)	1	11%
AW	Clinical Pharmacist-Estimated Time Saving(minutes)	0	0%
AX	Nurse-Estimated Time Saving(minutes)	0	0%
AY	GUIDIdentifier		
AZ	[CCG.MedManSouthlogGUID].CreateItem.[Create]		
BA	Title		
BB	Reduced Number of GP Appointments	0	0%
BC	Reduced Number of Nurse Appointments	0	0%
BD	Reduced Number of Admin Appointments	0	0%
BE	Reduced Number of Clinical Pharmacist Appointments	0	0%
BF BG	If Other, please state. Specific NNT's		
BH	Admin-Estimated Time Saving(minutes)		
BI	Reduced Number District Nurse visit		

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from Clostridium Difficile Dataset

The key learning points for the Clostridium Difficulties influence dataset are the same as those presented for the Key Points of Learning from Azithromycin Dataset (the reader is referred to page 18).

Annex E: Work Package 1: Buprenorphine Patches

Timing errors in prescribing were the third most common error identified in prescribing and monitoring, accounting for 10.5% of errors (Avery et al., 2012). In the case of Buprenorphine patches, timing errors arising because of the prescription of generic Buprenorphine patches with directions for applying one patch every 3 days (supply 10 patches), was dispensed as the Transtec® brand, which should be changed every 4 days. Transtec and Hapoctasin patches should not be left on longer than 96 and 72 hours respectively, consequently it is unlikely a patient would be harmed by changing them more frequently, but may not get the fully intended pain relief if they left on a 72 hour patch for 96 hours (2016). Potential for patient harm is low, however, there is also a potential cost saving associated with the correct frequency of application of the patches.

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE

Title: Buprenorphine – preparation, frequency and brand

Whilst reviewing the Controlled Drugs monitoring document for a GP practice, a member of our MMT discovered that a generically prescribed Buprenorphine 35mcg/hr. patch with directions for applying one patch every 3 days (supply 10 patches), was dispensed as the Transtec® brand, which should be changed every 4 days. The patient was not harmed in any way & had their prescription changed to reflect directions as for the Transtec® brand i.e. change every 4 days. A further check was carried out by the MMT Technician for other patients prescribed Buprenorphine patches in the GP practice, which highlighted other patches prescribed generically (patch to be changed every 4 days) – these were changed over to the Transtec® brand to ensure clarity.

Did you know…there are 3 different brands of Buprenorphine patch all with different frequencies for application/patch change? The brands are not interchangeable as they deliver different amounts of buprenorphine (Butrans® is weaker than Hapoctasin® and Transtec®) and the time each patch is applied is different; see table below (2016):

Brand of Buprenorphine patch	***Frequency of application/patch change***	***Strengths of patch available***
Hapoctasin®	***72 hours (3 days)***	***35, 52.5 & 70 micrograms/hr.***
Transtec®	***96 hours (4 days)***	***35, 52.5 & 70 micrograms/hr.***
Butrans®	***7 days***	***5, 10 & 20 micrograms/hr.***

Action to be taken locally:

In order to help reduce the risk of such incidents from occurring again in the future, Practice-based Medicines Management Team members are requested to:

1. Buprenorphine patches must be prescribed by brand & this must be added to the next 'Key messages' document for it to be shared with GP practices by the MMT. There is already a Buprenorphine patch 'local detailing aid' on the Medicines Management website (produced October 2015), which may be helpful in discussing the use of Buprenorphine patches with your GP practice & helpful for reiterating the importance of prescribing by brand.
2. Practice-based MMT members to search the GP e-prescribing system & identify all existing patients prescribed Buprenorphine patches generically, so that, with the agreement of the GP, they can be switched to being prescribed by brand on the e-prescribing systems within the GP practices. An ePACT search has been carried out for the time period April 2015 to January 2016 highlighting the number of Buprenorphine patch items prescribed generically for each GP practice within SDCCG.

Estimated risk reduction of interventions:

	Pre	***Post***	
Severity	***2***	***1***	
Likelihood	***3-4***	***2***	***(1 to 2 step reduction)***
Risk	3-4	2	(Reducing from low / moderate to low risk)

A medicines management intervention of safety searches to ensure that patients are being supplied with correct frequency of Buprenorphine patch is likely to result in a 1 to 2 step reduction in the likelihood of an event occurring. The intervention ensures that:

Patients receive the correct frequency of Buprenorphine patch

Existing patients are updated to the correct frequency of patch.

Transtec and Hapoctasin patches should not be left on longer than 96 and 72 hours respectively, consequently it is unlikely a patient would be harmed by changing them more frequently, but may not get the fully intended pain relief if they left on a 72 hour patch for 96 hours (2016). As such, the severity is low both pre and post intervention.

Estimated expenses / savings:

Medicines management pharmacists' reviews of patients' records on average take **7.5 minutes** per patient review (**£3.75 per patient** @£30 per hour – pharmacist). The greatest cost saving are likely to be derived from a member of the medicines management team updating the patients records, over the GP performing a similar role (see note on the assumption). Given the GP time costs over twice that of the pharmacists, the pharmacist is cheaper while also likely to be able to perform at least as quick (GP @£80 per hour).

Given the small predicted risk reduction it is unlikely there will be any further savings from avoided admissions.

There may be potential for cost saving if the 4-day Transtec patch is changed every 3 days instead. In the example given the safety message from the CCG changing the patch every 3 days instead of 4 would result in an additional spend of £9.21 per month.

Transtec 35 patches are £15.80 for 4 patches = £3.95 per patch
based on 4 day wear =98.75pence per day
based on 3-day wear = £1.31 per day
extra cost per 28 days = £9.21
Cost of the 4 Butrans patches based on the drug tariff March 17
5mcg = £17.60
10mcg = £31.55
15mcg = £49.15
20mcg = £57.46
Cost of 4 Transtec patches based on DT March 17
35mcg = £15.80
52.5mcg = £23.71
70mcg = £31.60
Cost of 4 Hapoctasin patches is the same in the DT although the actual patches cost less.

Overview of Buprenorphine SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Buprenorphine patches concentrated on interventions recorded under the headings of 'single' and 'multiple'. Single and multiple interventions were identified through a free text search.

In 32 weeks 520 patients were reviewed and 336 interventions were made, at an estimated cost of £3.75 per patient. Each interventions resulted in a likely 4-6 point risk reduction. A considerable cost saving may have also been achieved of up to £37134, assuming all interventions switching to generics at 4 days per patch.

Buprenorphine	***Dates: 15/04/16 to 29/11/16***
Based on April 2016 medicine safety message Annex G	

Action to be taken locally: In order to help reduce the risk of such incidents from occurring again in the future, Practice-based Medicines Management Team members are requested to:

> Buprenorphine patches must be prescribed by brand & this must be added to the next 'Key messages' document for it to be shared with GP practices by the MMT. There is already a Buprenorphine patch 'local detailing aid' on the Medicines Management website (produced October 2015), which may be helpful in discussing the use of Buprenorphine patches with your GP practice & helpful for reiterating the importance of prescribing by brand.
>
> Practice-based MMT members to search the GP e-prescribing system & identify all existing patients prescribed Buprenorphine patches generically, so that, with the agreement of the GP, they can be switched to being prescribed by brand on the e-prescribing systems within the GP practices. An ePACT search has been carried out for the time period April 2015 to January 2016 highlighting the number of Buprenorphine patch items prescribed generically for each GP practice within SDCCG.

Single and Multiple	***Single: 6 records (identified from 'task notes' [I])***		***Multiple: 78 records (identified from 'task notes' [I])***
Estimated risk reduction: 4 -6 point reduction		***Estimated Cost:***	
		Expense:	***£3.75 per review / intervention***
		Savings:	***£10.00 per review / intervention (GP)***
			£110.52 per switch (per year)
		Net saving per patient:	***£6.25 (if switch not made)***
			£116.77 (if switch made)

Patients (Combined single and multiple interventions)
Identified: 523 ***Reviewed: 520*** ***Interventions: 336***

Time taken and cost savings:
520 reviews x £3.75 = £1950 vs. £5200 (GP @ 80 ph.) Net saving = £1300

336 interventions with switches = up to £37134, assuming all interventions switching to generics at 4 days per patch (This unclear from SharePoint data).

Summary:
In 32 weeks 520 patients were reviewed and 336 interventions were made, at an estimated cost of £3.75 per patient. Each interventions resulted in a likely 4-6 point risk reduction. A considerable cost saving may have also been achieved of up to £37134, assuming all interventions switching to generics at 4 days per patch.

Table 5: *Completeness of Buprenorphine SharePoint data set.*

Column	Item	Number of complete records	%
A	Start Date *	83	99%
B	South Practice *	84	100%
C	Locality *	84	100%
D	South Staff *	84	100%
E	Task Title:		
I	Task Note		
J	Est. Cost Saving of Drug (£) annualised *	10	12%
K	No. Patients Identified *	84	100%
L	No. Patients Reviewed *	84	100%
M	No. Patient Interventions made *	84	100%
N	Risk Score Excel	78 ("no info needed")	
O	Task Completion Date	71	85%
P	Time Taken (mins) *	84	100%
Q	Detail Outcome and Comments	82	98%
R	Patients Switched		
S	Review (Other) Tasks		
T	Task Refused		
U	Risk Severity Before Intervention	1	1%
V	Risk Likelihood Before Intervention	1	1%
W	Risk Score Before Intervention	1 (82 "0")	1%
X	Risk Severity After Intervention	1	1%
Y	Risk Likelihood After Intervention	1	1%
Z	Risk Score After Intervention	1 (82 "0")	1%
AA	Risk Reduction	1 (82 "0")	1%
AB	Reduction of Risk Intervention Class	1	1%
AC	Est. Drug Additional Cost (£) annualised *	0 (6 "-")	0%
AD	Details Potential Outcomes		
AE	No. of Prescribers Influenced *		
AF	Likelihood of Advice Uptake		
AG	Potential No. Patients Interventions		
AH	Baseline Data		
AI	Follow Up Data 6/12		
AJ	Estimated Time Saving(minutes)		
AK	Estimated Time Saving Group		
AL	Number Reduced DN Visits		
AM	Reduced Number of Appointment		
AN	Reduced Number of Appointment Group		
AO	Task Title		
AP	CTID		
AQ	[ContentType].CreateItem.[Create.ID]		
AR	SDCCG Values		
AS	Archive		
AT	MonthGroup		
AU	YearMoGroup		
AV	GP-Estimated Time Saving(minutes)	13	15%
AW	Clinical Pharmacist-Estimated Time Saving(minutes)	13	15%
AX	Nurse-Estimated Time Saving(minutes)	4	5%
AY	GUIDIdentifier		
AZ	[CCG.MedManSouthlogGUID].CreateItem.[Create]		
BA	Title		
BB	Reduced Number of GP Appointments	3	4%
BC	Reduced Number of Nurse Appointments	3	4%
BD	Reduced Number of Admin Appointments	0	0%
BE	Reduced Number of Clinical Pharmacist Appointments	4	5%
BF	If Other, please state.		
BG	Specific NNT's		
BH	Admin-Estimated Time Saving(minutes)	6	7%
BI	Reduced Number District Nurse visit	0	0%

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from Buprenorphine Dataset

The key learning points for the Buprenorphine dataset are the same as those presented for the Key Points of Learning from Clozapine Dataset, the reader is referred to page 8.

In addition:

A large number of the records for Buprenorphine state that a number of patient interventions were made, however, on reviewing the notes patients have been reviewed, but no intervention has been made.

> ***Recommendation:*** *Include a brief definition of intervention with tick box or number to indicate when an intervention has been made.*

Annex F:Work Package 1: ACE/ARB and Spironolactone

Concomitant use of spironolactone for congestive heart failure with an angiotensin converting enzyme inhibitor or an angiotensin receptor blocker (ARB) is not routinely recommended because of the risks of severe hyperkalaemia, particularly in patients with marked renal impairment (MHRA drug safety update Feb 2016 – Annex G). Monitoring of blood electrolytes is essential in patients co-prescribed a potassium-sparing diuretic and an angiotensin-converting enzyme (ACEi) or an angiotensin receptor blocker (ARB) for heart failure. For individual patients, the risks vs. benefits of continuing concomitant treatment must be considered before taking action – including advice from cardiologists and/or heart failure specialists (MHRA drug safety update Feb 2016 – Annex G). Hyperkalaemia has been estimated to occur in between 1 in 100 and 1 in 1000 patients who take an ACEi or ARB.

Example Medicines Safety Message

EXAMPLE - Medicines Safety Message for Medicines Management Team meeting - EXAMPLE

Title: Concomitant use of Spironolactone with ACE or ARB

Patient search carried out to identify any patients on a combination of these drugs & a check of their potassium levels. Plus ensuring that the patient's electrolytes are being reviewed on a regular basis. Review of triple combination monitoring, appropriateness as risk of AKI to patient and S/Es.

We would also like to remind you that concomitant use of spironolactone for congestive heart failure with an angiotensin converting enzyme inhibitor or an angiotensin receptor blocker (ARB) is not routinely recommended because of the risks of severe hyperkalaemia, particularly in patients with marked renal impairment. Use the lowest effective doses if coadministration of these medicines is considered essential and monitor blood electrolytes (MHRA drug safety update Feb 2016 – Annex G).

This work is important to carry out locally based on national patient safety incident findings – ensuring patients are adequately monitored to prevent severe hyperkalaemia.

Action to be taken locally

In order to help prevent such incidents from occurring again in the future, the following actions are being taken by specific members of the Medicines Management Team:

- Patient search carried out to identify any patients on a combination of these drugs & a check of their potassium levels. Plus ensuring that the patients electrolytes are being reviewed on a regular basis

Monitoring of blood electrolytes is essential in patients co-prescribed a potassium-sparing diuretic and an angiotensin-converting enzyme (ACEi) or an angiotensin receptor blocker (ARB) for heart failure. For individual patients, the risks vs. benefits of continuing concomitant treatment must be considered before taking action – including advice from cardiologists and/or heart failure specialists.

Estimated Risk Reduction of Interventions

	Pre	***Post***	
Severity	***4***	***4 (1)***	***Down to 1 point if decision is made not to continue co-prescription***
Likelihood	***4***	***3 (1)***	***(1 to 2 step reduction)***
Risk	***16***	***6-9 (1)***	***(Reducing from high risk to moderate risk (low if stopped)***

Hyperkalemia has been estimated to occur in between 1 in 100 and 1 in 1000 patients who take an ACEi or ARB. A medicines management intervention identifying patients on a combination of ACEi or ARB with co-prescription of spironolactone is likely to result in 1 to 2 step reduction in the likelihood of an adverse event. The intervention ensures:

1. Adequate patient monitoring is being performed - the intervention is predicted to be around 1 step (approx. 4 points).
2. Determine if co-prescription is necessary – the effectiveness of the intervention is likely to be greater if co-prescription is stopped.

There is likely to be a large change in the severity if co-prescription is halted. Otherwise there is unlikely to be any change in the severity in the event of the occurrence of an adverse event.

Estimated expense / savings

Medicines management pharmacists' reviews of patients' records on average take **5 minutes** per patient review (**£2.50 per patient** @£30 per hour – pharmacist), interventions are likely to take longer, **10 minutes per intervention** (**£5.00 per patient** @£30 per hour – Pharmacist). The greatest cost saving are likely to be derived from a member of the medicines management team updating the patients records, over the GP performing a similar role (see note on the assumption of best practice). Given the GP time costs over twice that of the pharmacists, the pharmacist is cheaper while also likely to be able to perform at least as quick (GP @£80 ph.).

Given the predicted risk reduction from high (>15 points) to moderate or low risk it is also likely that there will be avoided hospital admissions (Emblin et al., 2016). Hyperkalaemia has been estimated to occur in between 1 in 100 and 1 in 1000 patients who take an ACEi or ARB (MHRA drug safety update Feb 2016 –Annex G). Even a single avoided admission will eclipse the cost of performing the intervention.

Overview of Spironolactone with ACE or ARB SharePoint Data

Analysis of the SharePoint data set for interventions made concerning Buprenorphine patches concentrated on interventions recorded under the headings of 'single' and 'multiple'. Single and multiple interventions were identified through a free text search.

In 32 weeks 133 reviews and 19 interventions were made, taking 14.2 hours at a cost of £427.30. Each interventions resulted in a likely 7 to 10 point risk reduction, however, decision is made not to continue co-prescription risk score will be 1. Given the magnitude of the risk reduction and previous published cases of hospital admissions arising from hyperkaliemia, admissions are likely to be avoided- even a single admission will exceed the expense of the intervention.

Spironolactone with ACE or ARB	***Dates: 20/04/16 to 26/10/16***
Based on MHRA Drug Safety Update Feb 2016Annex G	
Concomitant use of spironolactone for congestive heart failure with an angiotensin converting enzyme inhibitor or an angiotensin receptor blocker (ARB) is not routinely recommended because of the risks of severe hyperkalaemia, particularly in patients with marked renal impairment (MHRA drug safety update Feb 2016 –Annex G). Monitoring of blood electrolytes is essential in patients co-prescribed a potassium-sparing diuretic and an angiotensin-converting enzyme (ACEi) or an angiotensin receptor blocker (ARB) for heart failure. For individual patients, the risks vs. benefits of continuing concomitant treatment must be considered before taking action – including advice from cardiologists and/or heart failure specialists (MHRA drug safety update Feb 2016 –Annex G). Patient search carried out to identify any patients on a combination of these drugs & a check of their potassium levels. Plus ensuring that the patients electrolytes are being reviewed on a regular basis	

Single and Multiple	***Single: 1 record (identified from 'task notes' [I])***	***Multiple: 14 records (identified from 'task notes' [I])***

Estimated risk reduction:	***Estimated Cost:***	
7-10 points	***Expense:***	***£2.50 (review)***
		£5.00 (intervention)
	Savings:	***£6.65 (review) (GP)***
		£13.30 (intervention) (GP)
	Net saving per patient:	***£4.15***
		£8.30

Patients (Combined single and multiple interventions)

Identified: 133	***Reviewed: 133***	***Interventions: 19***

Time taken:
133 patient reviews x 5 minutes = 11 hours or £332.50
19 intervention x 10 minutes = 3.16 hours or £94.80

Summary:
In 32 weeks 133 reviews and 19 interventions were made, taking 14.2 hours at a cost of £427.30. Each interventions resulted in a likely 7 to 10 point risk reduction, however, decision is made not to continue co-prescription risk score will be 1. Given the magnitude of the risk reduction and previous published cases of hospital admissions arising from hyperkaliemia, admissions are likely to be avoided- even a single admission will exceed the expense of the intervention.

Table 6: *Completeness of ACE/ARB and Spironolactone SharePoint data set.*

Column	Item	Number of complete records	%
A	Start Date *	15	100%
B	South Practice *	15	100%
C	Locality *	15	100%
D	South Staff *	15	100%
E	Task Title:		
I	Task Note		
J	Est. Cost Saving of Drug (£) annualised *	3	20%
K	No. Patients Identified *	15	100%
L	No. Patients Reviewed *	15	100%
M	No. Patient Interventions made *	15	100%
N	Risk Score Excel	14 "No Info Needed"	0%
O	Task Completion Date	12	80%
P	Time Taken (mins) *	15	100%
Q	Detail Outcome and Comments	15	100%
R	Patients Switched		
S	Review (Other) Tasks		
T	Task Refused		
U	Risk Severity Before Intervention	14 "False"	0%
V	Risk Likelihood Before Intervention	0	0%
W	Risk Score Before Intervention	0	0%
X	Risk Severity After Intervention	15	0%
Y	Risk Likelihood After Intervention	0	0%
Z	Risk Score After Intervention	0	0%
AA	Risk Reduction	15	0%
AB	Reduction of Risk Intervention Class	15	0%
AC	Est. Drug Additional Cost (£) annualised *	1 "£"	0%
AD	Details Potential Outcomes		
AE	No. of Prescribers Influenced *		
AF	Likelihood of Advice Uptake		
AG	Potential No. Patients Interventions		
AH	Baseline Data		
AI	Follow Up Data 6/12		
AJ	Estimated Time Saving(minutes)		
AK	Estimated Time Saving Group		
AL	Number Reduced DN Visits		
AM	Reduced Number of Appointment		
AN	Reduced Number of Appointment Group		
AO	Task Title		
AP	CTID		
AQ	[ContentType].CreateItem.[Create.ID]		
AR	SDCCG Values		
AS	Archive		
AT	MonthGroup		
AU	YearMoGroup		
AV	GP-Estimated Time Saving(minutes)	2	13%
AW	Clinical Pharmacist-Estimated Time Saving(minutes)	3	20%
AX	Nurse-Estimated Time Saving(minutes)	0	0%
AY	GUIDIdentifier		
AZ	[CCG.MedManSouthlogGUID].CreateItem.[Create]		
BA	Title		
BB	Reduced Number of GP Appointments	0	0%
BC	Reduced Number of Nurse Appointments	0	0%
BD	Reduced Number of Admin Appointments	0	0%
BE	Reduced Number of Clinical Pharmacist Appointments	0	0%
BF	If Other, please state.		
BG	Specific NNT's		
BH	Admin-Estimated Time Saving(minutes)	0	0%
BI	Reduced Number District Nurse visit	0	0%

*Note: * Mandatory fields; Red = relevant items; Grey = items not recorded for single and multiple interventions; White = items of little or no relevance*

Key Points of Learning from ACE/ARB and Spironolactone Dataset

The key learning points for the ACE/ARB and Spironolactone dataset are the same as those presented for the Key Points of Learning from Clozapine Dataset, the reader is referred to page 8.

Annex G: Work Package 1: Original Medicine Safety Messages

February 2016

MHRA Drug Safety Update – February 2016

(For more information see full document at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500974/DSU_Feb_2016_pdf__2_.pdf)

Drug Safety Update

MHRA

Latest advice for medicines users

The monthly newsletter from the Medicines and Healthcare products Regulatory Agency and its independent advisor the Commission on Human Medicines

Volume 9, Issue 7, **February 2016**

Contents

The Medicines and Healthcare products Regulatory Agency is the government agency which is responsible for ensuring that medicines and medical devices work, and are acceptably safe.

The Commission on Human Medicines gives independent advice to ministers about the safety, quality, and efficacy of medicines. The Commission is supported in its work by Expert Advisory Groups that cover various therapeutic areas of medicine.

In January 2015 we informed you that children exposed to valproate in utero are at high risk of developmental disorders and congenital malformations. To further improve awareness of the risks of valproate in pregnancy we are asking that you use new communication materials to support discussion of these risks with women of childbearing potential and girls who take valproate—see page 2.

We would also like to remind you that concomitant use of spironolactone for congestive heart failure with an angiotensin converting enzyme inhibitor or an angiotensin receptor blocker (ARB) is not routinely recommended because of the risks of severe hyperkalaemia, particularly in patients with marked renal impairment. Use the lowest effective doses if coadministration of these medicines is considered essential and monitor blood electrolytes—see page 4.

(a) Valproate & risk of abnormal pregnancy outcomes: new communication materials

The MHRA have produced some new communication materials to support discussion of the risks of abnormal pregnancy outcomes with women of childbearing potential and girls who take valproate, which have been sent out to Healthcare professionals (cards to give to patients). Further resources are available online (see full MHRA Drug Safety Update).

See information for Dispensing Pharmacists and GPs from the MHRA below on the next page. It would be useful for the MMT to share this information with their GP practices.

For pharmacists

- Whenever you dispense a medicine related to valproate for a woman of childbearing potential or girl, give her a patient card, unless she confirms that she already has one.
- Encourage her to read the card (example in figures below) and enter her name and date to reinforce her own accountability to consider the information it contains.
- If you manage dispensing services in your organisation, ensure that processes are in place to allow these requirements to be met.
- Please continue to report any suspected side effects to valproate or any other medicine on a Yellow Card (see also guidance on reporting side effects experienced by the woman or child to medicines taken during pregnancy).

For general practitioners:

- Valproate treatment must be started and supervised by a specialist experienced in managing epilepsy or bipolar disorder.
- Consider the need to arrange treatment reviews with the relevant specialist for women of childbearing potential and girls who are currently taking valproate.
- If a woman who is taking valproate tells you she is pregnant or would like to have a baby, refer her to the specialist responsible for her care.
- Please continue to report any suspected side effects to valproate or any other medicine on a Yellow Card (see also guidance on reporting side effects experienced by the woman or child to medicines taken during pregnancy).

(b) Concomitant use of Spironolactone & renin-angiotensin system (ACEi or ARB) drugs in heart failure: risk of potentially fatal hyperkalaemia.

Monitoring of blood electrolytes is essential in patients co-prescribed a potassium-sparing diuretic and an angiotensin-converting enzyme (ACEi) or an angiotensin receptor blocker (ARB) for heart failure. For individual patients, the risks vs. benefits of continuing concomitant treatment must be considered before taking action – including advice from cardiologists and/or heart failure specialists.

Reminder for healthcare professionals:

- Concomitant use of spironolactone with ACEi or ARB is not routinely recommended because of the risks of severe hyperkalaemia, particularly in patients with marked renal impairment
- Use the lowest effective doses of spironolactone and ACEi or ARB if coadministration is considered essential
- Regularly monitor serum potassium levels and renal function
- Interrupt or discontinue treatment in the event of hyperkalaemia
- Suspected adverse reactions should be reported to us on a Yellow Card

March 2016

Medication Safety messages for Medicines Management Team meeting – March 2016

Learning from Medication Errors/Incidents

1) Incorrect dosing of Azithromycin (outside of Derbyshire)

An incident has occurred whereby a patient being treated for recurrent respiratory tract infections was prescribed an incorrect dose of azithromycin, which occurred due to the incorrect dose being typed in a clinic letter at a hospital & the incorrect dose was not identified by the GP upon receiving the letter, thus leading to the patient being prescribed & dispensed the incorrect dose.

A full root cause analysis (RCA) investigation of this incident is currently underway; including the hospital, CCG & community pharmacy involved.

Intended dose = Azithromycin 500mg to be taken **3 times a week** (Monday, Wednesday, Friday)

Dose prescribed = Azithromycin 500mg to be taken **3 times a day** (Monday, Wednesday, Friday)

Incorrect dosing of azithromycin in this case, has resulted in a patient losing their hearing, which is likely to be permanent.

Action to be taken locally: The CCG where this incident occurred have suggested that e-prescribing systems are updated to include an alert (such as a 'protocol' for System One) to highlight that long-term daily doses of more than 250mg are queried before proceeding any further.

We are looking into the best wording for this alert before uploading onto System One locally. Also, we are looking into updating the Bronchiectasis guidelines to include some information about possible use of prophylactic antibiotics, with a link to doses usually seen in these cases.

2) Incorrect strength of Adrenaline pen on repeat prescription

A 15 year old patient was found to have a paediatric dose (150micrograms – Epipen JR) Adrenaline pen prescribed on their repeat prescriptions. The patient should have been prescribed the higher strength (300micrograms) pen instead.

The BNF (edition 70) provides dosing information for use of Adrenaline pens (Brands include: Emerade®, Epipen®, Jext®) according to patient weight as per table below:

Patient weight	*Dose/Product for use*
Up to 30kg	Emerade® 150micrograms, Epipen JR®, Jext® 150micrograms®
≥ 30kg	Emerade® 300micrograms or 500micrograms, Epipen®, Jext® 300micrograms

Action to be taken locally: In order to help prevent such incidents from occurring again in the future, the following actions are being taken by specific members of the Medicines Management Team:

(a) A 'Formulary Message' is to be added to all Adrenaline pen brands within the System One e-prescribing system to make it clearer as to which strength of pen is to be selected according to patient weight (as per table above). This information will also appear in the dose section of the prescription along with advice about how the adrenaline should be administered e.g. *For patients weighing up to 30kg. Use as directed. Inject into the outer thigh.*
Action by: Temi & Formulary group looking at System One updates.

(b) Dose/strength of Adrenaline pen supplied to patients is also going to be added to regular (Quarterly or 6 monthly) 'Safety searches' which will be carried out by the Medicines Management Team. The aim of the safety search will be to ensure that patients are being supplied the correct strength of Adrenaline pen according to their body weight.
Action by: Morag & 'Safety searches' team – for subsequent searches to be carried out by the MMT at GP practices on a regular basis (e.g. Quarterly or 6 monthly – yet to be determined).

3) Switching of Metformin to branded Sukkarto®

An incident has occurred at a local GP practice whereby reception staff had taken it upon themselves to switch patients taking Metformin to Sukkarto® after misunderstanding information provided to them by a member of the Medicines Management Team. As reception staff were not aware of the meaning of "MR" & "XL", they also went on to switching patients who were taking plain Metformin onto the Sukkarto® branded generic. The error was identified in time, so most of the patients didn't receive the incorrect formulation. However, one patient did receive & take the incorrect preparation, but no adverse effects were noted to have occurred.

Upon reviewing this incident with the members of staff involved, it appears that reception staff understood email correspondence from the MMT to mean that they were to take action in making the switches. Therefore, it was felt that clearer communication is required in order for the recipient of emails to know what they are being requested to do with the information being provided.

Action to be taken locally: In order to help prevent such incidents from occurring again in the future, when communicating via email with members of staff at GP practices, it is important to be targeted when sending emails & make clear in the "Subject" line of the email what the recipient is to do with the information provided e.g. *"For Action:…."* Or *"For Information Only:…."*

Further information can be found in the Southern Derbyshire 'Email Protocol' document (available on the Intranet) & embedded in this document below.

Email-protocol SDCCG.pdf

NHS England Patient Safety Alert

(For more information see NHSE Patient Safety Alert; NHS/PSA/W/2016/001)

NHS England have produced a Stage one (Warning) Patient Safety Alert to highlight the *'Risk of severe harm or death when desmopressin is omitted or delayed in patients with cranial diabetes insipidus'*.

Cranial diabetes insipidus is a rare disorder of the pituitary gland characterised by an inability to produce antidiuretic hormone (ADH). This results in the production of large volumes of dilute urine. Cranial diabetes insipidus is the most common type of diabetes insipidus, which can be caused by damage to the hypothalamus or pituitary gland. Left untreated, patients with cranial diabetes insipidus will develop life-threatening dehydration and hypernatraema. In the treatment of cranial diabetes insipidus, desmopressin is most commonly administered as an intranasal spray or oral tablets, but may also be given as an injection in the treatment of acutely unwell or fasting patients. Desmopressin treatment should never be omitted or delayed in patients with cranial diabetes insipidus.

Significant changes since BNF69

NHS England state that they are working with various national bodies (NICE, UKMI) to ensure (as far as it practical) that stickers describing the errors in the 70th Ed of BNF and the current BNF C are attached to the paper-based volumes in current circulation – these will be made available to all for use when finalised at national level.

There are concerns about possible use of old (paper copy) editions of the BNF, which is not acceptable as many changes have been made to drug monographs – *see document attached below*. Therefore, please ensure that all old paper copies of BNFs are removed from clinical areas & encourage use of the latest version of the online BNF where possible.

April 2016

Medication Safety messages – April 2016

Learning from Medication Errors/Incidents

4) Buprenorphine patches (*NRLS form completed within SDCCG*)
Whilst reviewing the Controlled Drugs monitoring document for a GP practice, a member of our MMT discovered that a generically prescribed Buprenorphine 35mcg/hr patch with directions for applying one patch every 3 days (supply 10 patches), was dispensed as the Transtec® brand, which should be changed every 4 days. The patient was not harmed in anyway & had their prescription changed to reflect directions as for the Transtec® brand i.e. change every 4 days. A further check was carried out by the MMT Technician for other patients prescribed Buprenorphine patches in the GP practice, which highlighted other patches prescribed generically (patch to be changed every 4 days) – these were changed over to the Transtec® brand to ensure clarity.

Did you know?*…..there are 3 different brands of Buprenorphine patch all with different frequencies for application/patch change.*

The brands are not interchangeable as they deliver different amounts of buprenorphine (Butrans® is weaker than Hapoctasin® and Transtec®) and the time each patch is applied is different; see table below (information taken from BNF edition 70):

Brand of Buprenorphine patch	*Frequency of application/patch change*	*Strengths of patch available*
Hapoctasin®	72 hours (3 days)	35, 52.5 & 70 micrograms/hr
Transtec®	96 hours (4 days)	35, 52.5 & 70 micrograms/hr
Butrans®	7 days	5, 10 & 20 micrograms/hr

Action to be taken locally: In order to help reduce the risk of such incidents from occurring again in the future, Practice based Medicines Management Team members are requested to:

(a) Buprenorphine patches must be prescribed by brand & this must be added to the next 'Key messages' document for it to be shared with GP practices by the MMT. There is already a Buprenorphine patch 'local detailing aid' on the Medicines Management website (produced October 2015), which may be helpful in discussing the use of Buprenorphine patches with your GP practice & helpful for reiterating the importance of prescribing by brand. For the local detailing aid, see weblink or embedded document below:

Buprenorphine_Patches-Detail aid.pdf

(b) Practice based MMT members to search the GP e-prescribing system & identify all existing patients prescribed Buprenorphine patches generically, so that, with the agreement of the GP, they can be switched to being prescribed by brand on the e-prescribing systems within the GP practices. An ePACT search has been carried out for the time period April 2015 to January 2016 highlighting the number of Buprenorphine patch items prescribed generically for each GP practice within SDCCG – see Excel spreadsheet below & use the 'filter' to pick the GP practice(s) you are looking for specifically:

SDCCG ePACT data_Buprenorphine

5) Plain vs. Modified release formulations of drugs – getting it right at the Primary & Secondary care interface

A Pharmacist at DHcFT has highlighted an error to North Derbyshire CCG that appears to be occurring when patients are discharged from Mental Health wards and when discharge prescriptions are being processed by the GP practice. When venlafaxine, plain tablets are prescribed on the discharge prescription, these are then being added as the Modified release preparation, in error, by GP practice staff on to the GP e-prescribing system.

There are many other drugs that are available as plain vs. modified release preparations (e.g. Metformin, Gliclazide, Sodium Valproate etc) and therefore, an error can occur with any of these drugs too.

Action to be taken locally:

(a) Information about ensuring that the correct formulation (plain vs. modified release) is added to the GP e-prescribing system must be added to the next 'Key messages' document for it to be shared with GP practices by the MMT.
(b) General information as above will be added to the next edition of the Medicines Management newsletter.
(c) This information is to be considered for addition to the Medicines Coordinator training.

6) Learning from incidents reported nationally – Posaconazole tablets vs. oral suspension (Secondary Care)

A respiratory consultant had initiated treatment with Posaconazole for a patient with Pulmonary Aspergillosis at a dose of 300mg daily in tablet form. Due to supply problems with the Posaconazole tablets, a Pharmacist switched the formulation to oral suspension (40mg/ml) so that the patient received a dose of 7.5ml (300mg) daily. However, the Pharmacist had not realised that the oral suspension dose of Posaconazole should be 400mg twice a day due to a difference in bioavailability between the two formulations. The patient took the incorrect, lower dose of 300mg daily for 2-3months & was therefore under treated during this time.

The BNF (edition 70) states the following with regards to prescribing & dispensing information for Posaconazole:

"Where possible, Noxafil® (Posaconazole) tablets should be used in preference to the suspension because the tablets have a higher bioavailability; the suspension is not interchangeable with the tablets on a milligram-for-milligram basis."

As we all know, there are other products that also have differences in the effectiveness or dosing between formulations, examples of these include the following:

Efavirenz tablets have a dose of 600mg daily, whereas the liquid dose is 720mg daily.

Phenytoin capsules contain phenytoin sodium, whereas the liquid & infatabs contain phenytoin base – 100mg of phenytoin capsules is equivalent to 92mg of phenytoin liquid or infatabs.

Gliclazide MR tablets 30mg are equivalent to gliclazide normal release tablets 80mg.

Valproic acid - the equivalent amount of valproic acid available from Depakote 500mg tablets & Epilim EC/Chrono 500mg tablets are 500mg & 433mg respectively. A dose conversion is needed if switching between semi-sodium valproate & sodium valproate (e.g. Semi-sodium valproate 500mg to sodium valproate 600mg).

Summary of key learning points:

- Products with different bioavailabilities for different oral formulations are relatively rare, so it is difficult to remember all of them. However, the differences are important when encountered.
- If working with or caring for patients who are under the care of certain specialities, make sure you are familiar with the products that you might come across where this problem may occur.
- When communicating information about these medicines (e.g. sharing of information at the primary/secondary care interface, details on prescription to community pharmacy) make sure that the form of the drug is clearly specified & dose is checked in the BNF for the formulation being prescribed.
  Don't assume that that the person you are sharing information with will know what you know!

Action to be taken locally: General information as above will be added to the next edition of the Medicines Management newsletter.

Useful information from National Medicines Safety Officer network

1) Royal Pharmaceutical Society (RPS) – Summary care records (SCR) decision tool for Community Pharmacists

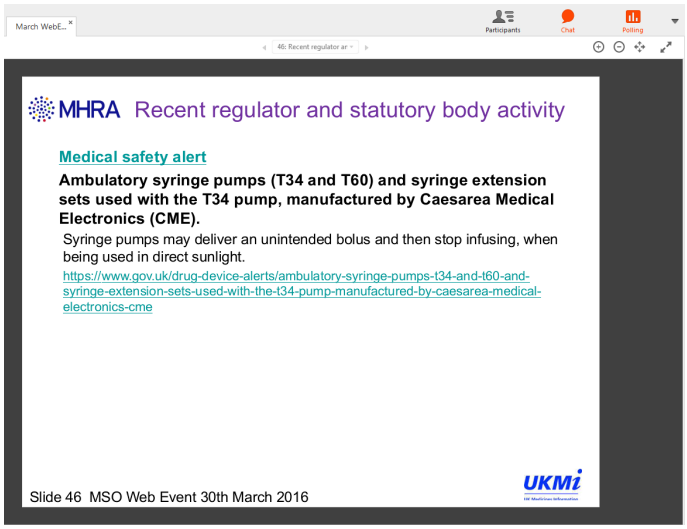
The RPS has produced a decision tool for community pharmacists as a guide to pharmacists in England accessing a patient's electronic Summary Care Record (SCR). The tool can be used alongside the RPS support guide for pharmacists accessing a patient's Summary Care Record.

To support community pharmacists in this new role of accessing SCR, the RPS's decision tool is designed to aid professional judgement. It includes a decision making matrix, which covers governance requirements for accessing a patient's SCR, plus potential scenarios where there may be a professional clinical need to do so. These scenarios include; supplying medicines in an emergency, finding out about allergies and checking potential medicine interactions with over the counter medicines.

The Accountable Officer for Derbyshire has informed us that there is a plan for SCR access to be rolled out amongst Community Pharmacies in Derbyshire from April 2016 onwards.

As more and more healthcare professionals access SCR & use the information within it to help make clinical decisions (e.g. checking drug allergies, drug histories, drug-drug interactions), we need to ensure that patients' GP records are kept up to date.

2) Other Medicines safety information



MHRA Drug Safety Update – March 2016

(For more information see full document on MHRA website)

Drug Safety Update

MHRA

Latest advice for medicines users

The monthly newsletter from the Medicines and Healthcare products Regulatory Agency and its independent advisor the Commission on Human Medicines

Volume 9, Issue 8, **March 2016**

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A review by EU medicines regulators of clinical studies and cases of suspected adverse drug reactions, reported by healthcare professionals and in the literature, has concluded that trametinib (Mekinist▼) can cause gastrointestinal perforation or colitis. Trametinib is authorised for unresectable or metastatic melanoma with a BRAF V600 mutation, either as monotherapy or in combination with dabrafenib.

Trametinib should therefore be used with caution in patients with risk factors for gastrointestinal perforation, such as gastrointestinal metastases, diverticulitis, or use of concomitant medicines that can cause gastrointestinal perforation – see page 2.

NHS England Patient Safety Alert

No new/further Patient Safety Alerts have been published since February 2016.

Annex H: Work Package 1: Data Dictionary

Item	*Description*	*Multiple*	*Single*	*Influence*	*Sys-Pro-Cha*
Start Date *	*Date of intervention* *(see also 'MonthGroup' and YearMoGroup')*	x	x	x	x
South Practice *	*Practice intervention conducted at*	x	x	x	x
Locality *	*Region (AV & SD; DAC; DCN; Erewash; South Derbyshire – Swad area)*	x	x	x	x
South Staff *	*Staff member intervention carried out (recorded?) by*	x	x	x	x
Task Title: ***Intervention Multiple*** ***Quality Intervention Single patient*** ***Influence Intervention*** ***System Process Change***	*SharePoint form intervention recorded under.* *Data items specific to form (see last four columns of this page).*	*60%*	*16%*	*22%*	*2%*
Task Note	*Notes on the specific interventions* *(note: interventions specified by the medicine management team, with the exception of Clozapine, are recorded here)*	x	x	x	x
Est. Cost Saving of Drug (£) annualised *	*Annualised cost saving of intervention. Value entered by pharmacist*	x	x	x	x
No. Patients Identified *	*Multiple interventions, number of patients identified*	x			
No. Patients Reviewed *	*Multiple interventions, number of patients reviewed*	x			
No. Patient Interventions made *	*Number of interventions made*	x	x	x	
Risk Score Excel	*Default 'no info needed'*	x			
Task Completion Date	*Date*	x	x	x	x
Time Taken (mins) *	*Time taken for intervention to be completed.*	x	x	x	x
Detail Outcome and Comments	*Detailed free text box* *(note: interventions specified by the medicine management team, with the exception of Clozapine, are recorded here)*	x	x	x	x
Patients Switched	*NO DATA* *! No option for data to be recorded?*				
Review (Other) Tasks	*NO DATA* *! No option for data to be recorded?*				
Task Refused	*Check box*	x			
Risk Severity Before Intervention	*From risk matrix scale of 1-5*		x		
Risk Likelihood Before Intervention	*From risk matrix scale of 1-5*		x		

Item	*Description*	*Multiple*	*Single*	*Influence*	*Sys-Pro-Cha*
Risk Score Before Intervention	*Calculated from risk severity before intervention and risk likelihood before intervention* *! If not entered, this just calculated as 0*		*x*		
Risk Severity After Intervention	*From risk matrix scale of 1-5*		*x*		
Risk Likelihood After Intervention	*From risk matrix scale of 1-5*		*x*		
Risk Score After Intervention	*Calculated from the risk severity after intervention and risk likelihood after intervention* *! If not entered, this just calculated as 0*		*x*		
Risk Reduction	*Difference between risk scores* *! If not entered, this just calculated as 0*		*x*		
Reduction of Risk Intervention Class	*Check box: Cardiovascular event; respiratory exacerbation; falls / fractures; bleed (GI); Adverse drug reaction; Central nervous system risk; Acute kidney injury / renal / hyperkalaemia; de-prescribing; waste; other (Other recorded under 'If Other, please state.')*		*x*		
Est. Drug Additional Cost (£) annualised *	*Annualised additional drug costs. Value entered by pharmacist*		*x*		
Details Potential Outcomes	*NO DATA* *!. No option for data to be recorded?*				
No. of Prescribers Influenced *	*Numerical value of prescribers influenced*			*x*	
Likelihood of Advice Uptake	*Numerical value of advice uptake*			*x*	
Potential No. Patients Interventions	*Calculated from prescribers influences and advice uptake* *v.small no. data items*				
Baseline Data	*v.small no. data items*			*x*	
Follow Up Data 6/12	*v.small no. data items*			*x*	
Estimated Time Saving(minutes)	*NO DATA*				
Estimated Time Saving Group	*NO DATA*				
Number Reduced DN Visits	*Only 4 data items*				*x*
Reduced Number of Appointment	*NO DATA*				
Reduced Number of Appointment Group	*NO DATA*				
Task Title	*NO DATA*				
CTID	*All data items = SPC*	*x*	*x*	*x*	*x*
[ContentType].CreateItem.[Create.ID]	*All data items = '5'*	*x*	*x*	*x*	*x*
SDCCG Values	*Values of the CCG* *Tick boxes: Patient Centred; Responsive; Partnership; Integrity; Understanding and compassion.*	*x*	*x*	*x*	*x*

Item	*Description*	*Multiple*	*Single*	*Influence*	*Sys-Pro-Cha*
Archive	*All data items = NO*	*x*	*x*	*x*	*x*
MonthGroup	*Month* *Duplicate data*	*x*	*x*	*x*	*x*
YearMoGroup	*Year* *Duplicate data*	*x*	*x*	*x*	*x*
GP-Estimated Time Saving(minutes)	*Estimated time saved of GPs*	*x*	*x*	*x*	*x*
Clinical Pharmacist-Estimated Time Saving(minutes)	*Estimated time saved of clinical pharmacists*	*x*	*x*	*x*	*x*
Nurse-Estimated Time Saving(minutes)	*v.small no. data items*	*x*	*x*	*x*	*x*
GUIDIdentifier		*x*	*x*	*x*	*x*
[CCG.MedManSouthlogGUID].CreateItem.[Create]	*'5' for first ~3000*	*x*	*x*	*x*	*x*
Title	*incrementally decreasing number (some text)*	*x*	*x*	*x*	*x*
Reduced Number of GP Appointments	*Reduced number of GP appointments* *v.small no. data items*	*x*	*x*	*x*	*x*
Reduced Number of Nurse Appointments	*Reduced number of nurse appointments* *v.small no. data items*	*x*	*x*	*x*	*x*
Reduced Number of Admin Appointments	*NO DATA*	*x*	*x*	*x*	*x*
Reduced Number of Clinical Pharmacist Appointments	*Reduced number of clinical pharmacists appointments* *v.small no. data items*	*x*	*x*	*x*	*x*
If Other, please state.	*Free text box, if other is selected on 'reduction of risk intervention class'*		*x*		
Specific NNT's	*Only 8 reports*	*x*	*x*		
Admin-Estimated Time Saving(minutes)	*Estimated time saved of admin*	*x*	*x*	*x*	*x*

Annex I: Work Package 2: Detailed Methods

Semi-structured interviews were conducted to examine Clinical Pharmacists, Pharmacy Technicians and GP's constructs of the expanded role of the Clinical Pharmacist in the Belper Five. Interviews were conducted with the Clinical Pharmacists and GP mentors from Riversdale Surgery, Appletree Medical Practice, Arthur Medical Centre and Whitemoor Medical Centre. Ethical approval for the research was granted by the Health and Social Care research ethics committee.

A.1 Semi-structured interview design and analysis

The interviews were conducted in person with the locality of the Belper Five practices. Semi-structured interviews were chosen as their flexibility allows for the generation of rich and informative data, particularly suited to studies investigating new, under-reported ideas (Robson & Mccartan, 2016). Open-ended semi-structured format questions were used flexibly and will be omitted, adapted or elaborated according to the demands of the individual interview (Interview Schedules Annex L and M).

The interviewer adopted a talk back stance to the interviewee while trying to avoid directive or closed questions or interpretations (Shaffir & Stebbins, 1990). In this way, questions were used to promote a two-way dialogue with which to explore key themes.

A.2 Key areas for exploration within the interviews

The interviews will explore the Clinical Pharmacists, Pharmacy Technician and GP mentors' perceptions of the shift to a patient facing role. Research examining the perceptions of Clinical Pharmacists and others of Clinical Pharmacists' roles in the era of expanded scopes of practice has been minimal. The interviews firstly aimed to understand the role, clarify pharmacy practice activities associated with those roles and challenges faced by the Clinical Pharmacists, secondly if not already discussed, the interviews continue to explore themes highlighted previously in literature and the original memorandum of understanding:

- The management of chronic conditions and co-morbidities;
- The retention and enhancement of core medicines management support;
- Practice access to expert advice practice resource for medication related queries;
- Reduced GP workloads – particularly medication related GP visits;
- Reduced prescribing waste and optimise repeat prescribing within practices;
- Increase patient satisfaction related to medication use;
- Increasing the number of post hospital medication reviews;
- Ensuring patients are involved in long term prescribing decisions and increase patient satisfaction related to medication use.

A.3 Data analysis

All interviews were digitally recorded and transcribed verbatim. Analysis was conducted using conventional content analysis aided by the use of NVIVO (a computer based analysis programme).

A.4 Roles

As set out in the Memorandum of Understanding the following terms are used throughout the document.

Clinical Pharmacist	The Clinical Pharmacist is a new role who will provide expertise in medicines optimisation and medication review as an integral member of the practice team. They will be in a patient-facing role which will enable them to influence and optimise prescribing with the ability to manage long-term conditions independently. Through face-to-face reviews, which may involve home visiting, they will ensure patients are involved in prescribing decisions, their co-morbidities are optimally managed and will reduce wasteful and inappropriate prescribing. Their interventions will contribute to the reduction in medicines-related admissions and will increase access of patients to expert advice.
Clinical Pharmacist Lead	The established Clinical Pharmacist employed within the sub-locality
Clinical Pharmacist Team	The collective group of Clinical Pharmacists employed to work in the above role, within the Belper sub-locality
Clinical Pharmacy Team	The collective group of Clinical Pharmacists as above, and additionally the extra technician hours identified to support the Clinical Pharmacists
MMT Lead Clinical Pharmacist	SDCCG Lead Clinical Pharmacist who will provide management support to the clinical pharmacy team within the GP practices in the Belper sub-locality.
Medicines Management Technician	SDCCG currently provide technician support to the five Belper practices, however, the project proposal also includes extra technician support to assist the Clinical Pharmacist team in their day-to-day activities

Annex J: Work Package 2: Detailed Findings

The following annex contains the detailed analysis of interviews conducted with the Clinical Pharmacists and GPs of the Belper Five. The seven themes describe how the project scheme has met and in many cases exceeded the primary goals, namely introducing a clinical pharmacy service and integrating the role of the Clinical Pharmacist as part of the Belper locality practice teams. Challenges are highlighted within the themes of: (1) Benefits to the patients; (2) Benefits to the practice; (3) The benefits of medicines management; (4) Continued professional development; (5) Supporting the Clinical Pharmacists; (6) Monitoring and evaluation; and, (7) the Pharmacy Technician.

B.1 Benefits to Patients

The MoU project sets out the desire to improve patient care and patient experience and to increase patient satisfaction. This was expected to be achieved through the development of Clinical Pharmacist-led clinics within the practice which offer face-to-face reviews with patients, help enhance patients' understanding of medications and their use, and ensures optimal management of patients' prescriptions in order to reduce inappropriate and unnecessary prescribing. This, in turn, is expected to reduce the number of hospital admissions and readmissions by supporting patients and identifying and addressing medicines related issues.

Key benefits to patients highlighted in the interviews focussed on quicker access to medication advice, detailed medication reviews, greater time to discuss medications with patients and providing a different perspective on patients' medication. It is worth highlighting that the face-to-face contact with patients was described by the Clinical Pharmacists as one of the most enjoyable and fulfilling aspects of the role. The key benefits to patients were as follows:

B.1.1 Quicker access to medication advice

Three, of the four Clinical Pharmacists have regular telephone consultations slots. *"Lots of queries you can do over the 'phone rather than face-to-face so, as soon as reception gets anything to do with medication now, they will put it onto a telephone slot with me and that generally works really well."* (Clinical Pharmacist Lead). The provision of telephone consultations provides easier access to medication related expertise for patients, particularly those who are unable to attend the practice. The telephone consultations provide additional time to support the frail & elderly population covered by the practice.

> *I think, in terms of accessibility to ask questions, so a lot of patients have been able to have telephone conversations with [Clinical Pharmacist] about queries and for those that are housebound as well. You often don't get a full proper meds review and [Clinical Pharmacist] has been actually going out and doing home reviews for patients that really can't get in as well. So, I think that's been a different service to patients than we've offered before.* ***GP 3***

Together with the greater provision of clinics within each practice by the Clinical Pharmacists, and the increased ability of members of the practice team, particularly GPs, to work to the top of their experience, the net gain was described as better access for patients to the appropriate physician:

> *I think it gives them an opportunity to talk to someone. We have lots of phone queries as well around medication, so yes, I guess before [Clinical Pharmacist Lead] and I were here, they would have just gone through to the GP because there is no one else that really would be trained to deal with those, and I suppose coming to us again, that is diverting the work to the GPs.* ***Clinical Pharmacist 2***

B.1.2 Detailed medication reviews.

Clinical Pharmacists are able to complete detailed reviews of patients' medications. As highlighted in point 2 of *'benefits to practice'* prior to the project medications reviews were usually completed by GPs. This work was taken off GPs (freeing up time for them) and taken over by the Clinical Pharmacists. In wider academic literature, exploring the benefits of Clinical Pharmacist based interventions there are numerous examples of the advantages to patients' health. Example Clinical Pharmacist increase guideline adherence of patients with chronic kidney disease (Cooney et al., 2015) and in diabetic patients to improve medication adherence and glycemic control (Skinner, Poe, Hopper, Boyer, & Wilkins, 2015). The detailed medication reviews were particularly beneficial to patients with polypharmacy and those with chronic conditions:

> *Well, we're experts on medication. So, I think, they're getting more time taken with them to go through their medication. Certainly some patients I've spoken to have gone 'oh, I've not had this before' and then it sort of explaining that is someone is on regular medication then we should be seeing you on a yearly basis and discussing medication and checking that it's still appropriate and nothing is changed and is there any reason for medication to be changed. But it's probably been done as part of consultation where they've come in about something else and during that a GP or a nurse has said to them 'how are you getting on with your medication? Is everything okay?' 'Yes' and they've ticked it and marked it that the medication review has been done for another year for them.* ***Clinical Pharmacist 4***

The MoU sets out improvements in chronic disease management as a desired outcome of the scheme. Their in depth knowledge of medications put the Clinical Pharmacists in an ideal position to concentrate on chronic disease and polypharmacy. Clinical Pharmacists within the Belper Five have been running clinics to treat patients, including those with hypertension, asthma and coronary heart disease:

> *I have three clinics a week now seeing patients. So I'm, obviously, responsible for seeing those patients. Most of them are for medication review; quite a lot are hypertension review because that's what I specialised in for my IP course. And then some asthma review in there as well. So it will be doing those. I'm responsible for dealing with discharges and outpatient letters that come into the practice and update the medication.* ***Clinical Pharmacist 4***

> *she is very comfortable doing hypertension, asthma reviews, thyroid, developing skills in COPD and also she is very interested in the care home kind of, chronic patient de-prescribing so being able to help a lot in that respect so, no, there is nothing that we sort of thought we would get that we are not getting if that makes sense.* ***GP 1***

As highlighted in B.2.2 *'The appropriate practitioner seeing the appropriate patient'* medications reviews could (and would usually be) be completed by GPs, however this both frees GP time and, given their expertise, Clinical Pharmacists are likely to perform this task at least as well and more frequently. This was supported by all GPs:

> *One of the biggest things, I suppose, is time in that she's taken roles that, perhaps we would have fulfilled or some of our nurses would have fulfilled in terms of medication reviews but I think quality, our medication reviews are certainly being done better. I think, traditionally that's something that gets added on to the end of a normal consultation for something else. What [Clinical Pharmacist] been doing is a much better job and a much more thorough job at making sure medications are actually reviewed properly, monitored properly. I think, also, we've had a better service for sort of hypertensive patients so, [Clinical Pharmacist] been seeing patients, starting medication, managing them and following them up whereas, traditionally, it would have been more difficult, I think, for patients to book appointments and get in and have that sort of initiation done for the hypertensive. That's been managed much more smoothly.* ***GP 3***

Finally, the Clinical Pharmacists are able to monitor patients more closely than would be afforded by the limited appointments of GPs.

> *if they are seeing somebody for particular medication that they have either started or changed in dose . . . it will be much easier for them to come back and monitor that patient more regularly, maybe every fortnight if needed . . . whereas the patient might struggle to get in with the GP at that frequency. So I think it's going to improve, certainly the safety prescribing, but yeah, also the outcome, so what you are trying to achieve by giving the patient that drug, but also make sure no harm is coming or no ill effect, side effects, things like that.* ***GP 1***

B.1.3 Time to explain to patients

Clinical Pharmacists appointments are longer than those typical of GPs and nurses, providing additional time to explore medication queries and discuss issues with patients. The length of the appointments that the Clinical Pharmacist has varies between practice, but typically are longer than the 10 minutes afforded to GPs, with the addition of regular catch-up slots. This facilitates an improved clinician to patient experience, and is likely to result in an increased knowledge and understanding by the patient of their own medications:

> *. . . explaining to them that I can spend time and concentrate on their medicines so that way they can understand why they are seeing me, what benefit I have over a GP that I can spend more time with them and sort it out. Yes, a GP could do that, but maybe wouldn't do it as well as I would and have the time to do it in as much depth, so I think overall, it will improve.* ***Clinical Pharmacist 1***

The opportunity that the longer appointment time afforded, facilitates shared decision making:

> *I have seen a number of patients needing to start on statins for their cholesterol so having that, they come in, we discuss what it is for, what the side effects are, what we would do, what monitoring and giving the patient that sort of shared decision so that they can make the decision themselves. So, a lot of people, well, what would you do? It's not what would I do, this is the reasons why I might want you to take it, but you, you have the decision at the end of the day as to whether you do and you do get a lot, they, I have had, because I have had quite a lot of, obviously with that, which has been quite nice, it's quite straightforward . . . others are like they are not sure and might want to go away and think about it and then I will follow it up and they might start it.* ***Clinical Pharmacist 1***

Further advantages for patients seeing the Clinical Pharmacist are derived from the focused nature of appointments, largely free from distraction by patient's acute conditions:

> *... [I] have like 15 minutes to see patients. GPs have 10 minutes to see a patient and you know, they normally come in with another problem and then you have to do a medication review on top of it, so at least I have got just the focus of seeing the patient for their medicines, having the time to chat through with them. Not getting side tracked with your painful foot, because you know, yes, you might have a painful foot but I can't, you know, I can't do anything about that but we can go through your medicines, making sure that you understand them and I suppose, yes, the GPs could do that, but that's not what they are trained in the diagnosis and treatment. . . . So, I think having that little bit extra time to focus just on the medicines and not be worried about examinations that the patients have enjoyed that and have felt they have actually.* ***Clinical Pharmacist 1***

It was noted by the Clinical Pharmacists that they would like to develop additional clinical skills relating to the diagnosis and management of minor ailments. For example, patients asking about excessive ear wax was discussed by three of the Clinical Pharmacists. Similarly, the wish for clinical skills to aid in the monitoring and diagnosis

of patients, such as chest sounds were also discussed. Clinical skills for the identification and treatment of such patients should be discussed.

B.1.4 Different perspective

The Clinical Pharmacists appointments provide patients with a different clinical perspective on their treatments. Clinical Pharmacist expertise allows for the discussion of alternative treatments, and enables the clinician to explore potential treatment interactions that may have otherwise been missed:

> *They're really good at medication. They perhaps come at it from a... my experience is that patients, I think, feel that we come at it from a different point of view as well so, not necessarily from guidelines and templates and perhaps going through things quite rigidly . . . but we're perhaps less driven by, you know, what should happen next and perhaps more holistic, really, I think. I know that's becoming more and more the theme, really, that it's about the patient and not following guidelines.* ***Clinical Pharmacist Lead***

Further, the Clinical Pharmacist were described by one GP as providing a more holistic look at patient's medications. Facilitated by their knowledge of medications and the practicalities of patients behaviour, the Clinical Pharmacist provides increased support for patients taking medication:

> *All of the side effects, whereas they are really good at that and looking at how they can fit their medication in with their daily routines, so thinking more about the practicalities of taking medication as well, which I don't think we are great at as GPs to be honest. And so, the patients really like that, the feedback that I have heard is oh yeah, you know, they are very positive and they really like somebody taking an interest in that part of, I suppose, their health care.* ***GP 1***

Two of the Clinical Pharmacists highlighted that patients may be more honest with Clinical Pharmacists when discussing their medications and adherence to treatment regimes. This may be because patients view the Clinical Pharmacists as more impartial than the GPs in the patients overall treatment. Anecdotally, rather than telling their doctor what they want to hear, the patients seem to be more willing to discuss openly their medication adherence with the Clinical Pharmacists.

> *I get the impression that some patients come in, if they see the doctor, they feel that they have to tell them I am doing what you told me to do. But because they are seeing me, they are more honest as to what they are actually doing with their medicines, because you are like, I am like, you know. Oh, I have stopped taking that, I only take it once a day now. That is fine, that's what I would have actually, that is what I was hoping you were doing, that I was going to try and reduce it. But if you have done it yourself, that is fine and I think sometimes if they had seen the GP they might have been a bit like, Oh, I have been naughty. I have stopped, I have reduced my dose. It depends on what medicines it is.* ***Clinical Pharmacist 1***

B.1.5 Selecting correct patients

In order to maximise the effectiveness of the delivery of their clinics it is necessary to ensure that the Clinical Pharmacist are seeing the most appropriate patients: those with chronic conditions and/or polypharmacy. This is likely to be achieved in two ways, though directions provided to reception staff of who to book onto clinics and secondly through the proactive selection of patients that require detailed medication reviews:

> *. . . it is about trying to find the right patients for me to see because really, I guess the patients just with asthma can be seen by a nurse practitioner. But if they have got asthma and they have got hypertension and they have got thyroid problems and some aches and pains, that list of medication is then 10/12 long*

and then the nurses don't feel happy reauthorizing that so they just do the asthma and therefore the poor patient has got to come back to have a medication review at some point. ***Clinical Pharmacist 2***

B.2 Benefits to the Practice

There was no doubt expressed by any of the Clinical Pharmacist or GPs as to the value of Clinical Pharmacists in patient facing roles within the Belper Five. It was expressed by both GPs and Clinical Pharmacists that the project had met the primary aim set out in the MoU – providing improved access to care for patients. Primarily, the benefit to the practice may be divided into three key areas:

B.2.1 Increasing the capacity of the practice

The presence of the Clinical Pharmacist within each of the practices provides additional capacity through: (a) the clinics of the Clinical Pharmacists providing access to expertise in medication for patients, and (b) the redistribution of practice medication related administrative work to the Clinical Pharmacists and the Pharmacy Technician. This extra capacity resulted in another key benefit, a more appropriate distinction between GPs and Clinical Pharmacists in terms of the types of patients each saw. GPs reported seeing acutely unwell patients, whilst Clinical Pharmacists predominantly focussed on those with chronic conditions and polypharmacy. The net gain of this demarcation appears to be a more appropriate use of practitioners' time within each practice:

I think it's definitely reduced workload in that some people would obviously book in for medication reviews so, potentially, you're having a fairly simple consultation with a GP that could be done by a Clinical Pharmacist beforehand and when appointments are stretched and you're limited for time, it's a much better use to have it with the Clinical Pharmacist. Definitely, our workload has gone down as a result. ***GP 3***

The Clinical Pharmacist Lead, who works as a Clinical Pharmacist within a practice of the Belper Five (separately to the project being evaluated, employed by the practice), described the benefits of such a scheme, compared to a more traditional way of working. In particular, when seeing the correct patients the Clinical Pharmacist can eliminate, or reduce, the need for patients to have multiple appointments with different members of the practice team, including the GP:

. . . most patients who then had chronic disease, saw the nurse initially and then came back to a doctor to have their medication updated. So, the nurses didn't take that responsibility on so what having me allowed the practice to do . . . was that they could see the nurse but then come and see me with things like kidney disease, blood pressure, asthma, COPD, and then that started to then allow some of the patients just to see me so, the more complicated ***Clinical Pharmacist Lead***

The integrated Clinical Pharmacists within the practice has also allowed them to take on and use their judgement to reduce the medication related administrative workload of other members of the practice. The ownership and loosely defined role of the Clinical Pharmacist has allowed this to be unique to each of the practices. A recent article by Barnes, Ashraf, and Din (2017) estimated that practice based Clinical Pharmacists can take on approximately 20% of the GPs workload within a practice, specifically the proportion typically taken up by medicines-related activities.

. . . there is also quite a lot of admin involved as well so we get an awful lot of paperwork, essentially, generated from a prescribing point of view, both with the repeat prescription system and then clinic and discharge letters from the hospital where medications need to be changed and updated, so their role is also very much helping manage that as well because that can be quite time consuming. ***GP 1***

There is a considerable, near indefinite, amount of medication related administrative work that could be completed within the practice. However, all Clinical Pharmacists were acutely aware that their time was a finite resource:

> *I do all the care home queries for the repeat prescription . . . she [Repeat Prescription Clerk] tasks to split them up because to give them all to one GP would have been far too much work. Sometimes it can take a couple of hours and I offered to do those for her, because they come to me, I sort them and then I give them all back to her, so she knows exactly where they are. But as a result, then that takes two hours of my time up . . . I don't mind doing, but that, as far as I am concerned, that would have gone to a GP to do, so that, that is freeing up their time, but as a consequence, that is now my role.* ***Clinical Pharmacist 2***

Hospital discharge letters and repeat prescribing requests were discussed by all of the Clinical Pharmacists as an example of administrative work, which takes a considerable proportion of their time each day. Increasing the number of discharge medication reviews was a desired outcome of the project, as set out in the MoU. Typically these would be distributed amongst the GPs to complete. Within the Belper Five these are now predominantly completed by the Clinical Pharmacists and Clinical Pharmacist Technician:

> *I would spend then probably another hour or two going through prescription queries, discharge letters, other clinic letters that I have which, and I suppose the purpose of all, so the prescription queries is obviously to get prescriptions to the patient and the discharges, the hospital discharges and clinic letters is a little bit I suppose of, what you call medicines reconciliation, so making sure that what we think the patients on, matches what the intention is. If there is anything new that has been started, has that been put on their record? Do they need a prescription for it? Do they need monitoring done?* ***Clinical Pharmacist 1***

As a result of the considerable potential for work that could be completed by the Clinical Pharmacist within each of the practices, the formative nature of the first year of working and the limited time available, it is unsurprising the need to appraise the role was discussed:

> *. . . at this stage, because we have been doing it for a year, it's worth sort of having a little step back and deciding which patients should I really be seeing. Yes, you want to help out and tick boxes for patients having their medication reviews, but which ones could I make more of an impact on.* ***Clinical Pharmacist 1***

> *I am going to have a meet up with our in-house team to find out how they feel we need to take things forward, but also thinking about how best to use them. So thinking more about maybe care home medication reviews, and how we might manage that, so that's probably another thing to look at.* ***GP 1***

B.2.2 The appropriate practitioner seeing the appropriate patient

The provision of a Clinical Pharmacists within the practice has allowed the GPs to spend a greater proportion of their time working to the top of their expertise: seeing the most complex of cases and those with acute needs. One of the desired outcomes of the project was a reduction in the number of GP appointments (MoU). However, the phrasing of this objective may not be correct. Rather than reducing workload, it was reported that the model redistributes work and allows the GPs to spend their time seeing the most appropriate patients. This was termed 'right clinician, right time' by one GP:

> *The flexibility in the system comes in having the right kind of workforce all doing the right kind of jobs, so we have a, our [practice manager], has a phrase, right clinician right time. So, it might be the right clinician the wrong time, it might be yes, I am going to see a GP but it's in 6 weeks' time, in which case we say, oh, I think you might have cancer, that is right clinician wrong time and there's wrong clinician*

> *right time, so you might have ready access to see somebody and you know, whose maybe got into see our advanced care practitioner who then says I don't know what the problem is, we will bring you back in 6 weeks and actually, had they seen a GP at that time, it might have been a different outcome.* ***GP 1***

Allowing practice staff to work to the top of their experience and expertise was acknowledged as a core benefit by both the Clinical Pharmacists and the GPs:

> *. . . by me doing that it's freeing up the GPs because they were doing medication reviews and they still do some. But that time is free for them to actually see people who were acutely poorly on the day or need a specialist GP input. So, I think that's the benefit to patients as well so you should be able to get an appointment more easily.* ***Clinical Pharmacist 2***

> *. . . the benefits are reducing appointments with us, so where they would feed up to see people who are perhaps more complicated, perhaps more acutely unwell, so the more you know, chronic management can be dealt with by a Clinical Pharmacist and in terms of just reducing that burden with the admin of doing the paperwork . . . but changing medications from clinic and discharge letters and things like that and we have queries . . . when a repeat prescription is running out, a query is generated so that would mean that either a doctor or Clinical Pharmacist needs to go in the patients notes to figure out what needs to happen next, to review, so those can be, you know, quite numerous some times. We do all share them, so amongst the GPs but it's nice to have an extra pair of hands.* ***GP 1***

The benefits of working to the top of experience was not only discussed for the GPs, but also other members of the practice team, including the Clinical Pharmacists. For example, the Clinical Pharmacists expertise lies in their knowledge of medications and the management of patients for polypharmacy and chronic diseases:

> *. . . GPs see very complicated people with their very limited time so, again, having somebody who can do that and I think it's actually really difficult and challenging to take people off medication. Again, I'm not saying an ANP, ACP can't do that but I think, again, that's a really, quite a unique role, really for a Clinical Pharmacist doing some of that.* ***Clinical Pharmacist Lead***

The experience and nature of the patient facing work of the Clinical Pharmacists were described as varying based on both their experience and the experience mix of the practice. For example, while two of the Clinical Pharmacists clinics focus predominantly on asthma and hypertension, another Clinical Pharmacist clinics are broader but do not cover asthma, COPD or diabetes as the practices nurses are already established at completing these. The flexibility afforded by the project has allowed the Clinical Pharmacists experience to be matched with the experience of other practitioners:

> *So I do two clinic sessions a week. That's largely based on, I'd say, medication review, but it isn't just medication review because I think that belittles it a bit. I think it's more like the morbidity reviews that NICE have started to talk about. So I do everything, apart from I don't do asthma COPD or diabetes because the nurses in the practice are very established at doing that. So they see the patients with those conditions. If they've got those conditions and a lot of other stuff I might see them as well. But I won't delve too deeply into those bits because I know they will pick them up and I concentrate on the other conditions.* ***Clinical Pharmacist 3***

As a result of the two primary ways in which the Clinical Pharmacist and the Pharmacy Technician are able to assist with the demands placed on the practice (i.e. medication related administration, or clinics) continued discussion within the practice need to occur of where the greatest value of the Clinical Pharmacist lie. If it is determined that the greatest value lies in Clinical Pharmacists seeing more patients and increasing their capacity,

then an increased number and development of more flexible clinics is appropriate. If it is decided that more medication administrative work is of benefit, then a greater number of clinics would not be appropriate.

B.2.3 Delivers expertise in medications within the practice

The final primary benefit to the practice is the Clinical Pharmacist's expertise in medications. The MoU states that the Clinical Pharmacist will become the practice resource for medicine-related queries. They will promote high quality, evidence based and cost-effective use of medicines within the practice, as well as providing additional support to introduce the latest NICE guidance The Clinical Pharmacists have a detailed and up-to-date understanding of local and national medications guidelines and are easily accessible by all staff within the practice. Medication related queries are easily directed to the Clinical Pharmacist and are responded to quickly with evidenced based answer, in terms of both what to do and what the guidelines say:

> *Sure, so they are a fantastic resource with any queries, . . . [If] we are sort of a bit stuck about how to manage something, you know, what medicines are best to try next, that sort of thing, or advising us about possible side effects, in a way that things might be affecting people . . . they have been really helpful just to ask . . . for example, a patient who had severe jaundice which I thought was probably one of the medications that he had been started on recently but I wasn't sure which one could be the culprit so our Clinical Pharmacist went away and had a really in depth look at that for me using the resources she had, which was helpful for me to then know how to manage this chap for further analysis.* ***GP 1***

The Clinical Pharmacist also act as a resource for other members of the team, reducing the number of queries that would be directed to GPs, saved for the visiting CCG Medicines Management Clinical Pharmacist, or otherwise not answered. This is also likely to be of benefit to the quality of the care offered to patients both in terms of medication advice and the speed that queries are dealt with:

> *. . . if they have got queries about medicines, there is somebody in-house that they can go and ask to and I think yes, there has always been the CCG Clinical Pharmacist who would be in now and again, there has always been that point of contact, but I think that by having somebody who is just sat in your surgery that you can pop in and go, Oh, I have got this patient, what would you do? They are probably more likely to come and ask me so I have had like some of the nurses and the advance nurse practitioners come and they are like, oh, I have seen this patient, what would you do, you know, what would you do with these medicines? And maybe if I hadn't have been sat here as a member of the practice, they might not have asked me.* ***Clinical Pharmacist 1***

Finally, further benefit is also derived from having a Clinical Pharmacist within the practice, rather than directing questions and queries remotely to the medications management team, or a member of the medications management team visiting on a weekly bases:

> *I think the advantage is that it is one person so, whatever query or whatever issue you've got, you just go to that same person. I think it's made it much easier. I think people, you know, reception might not want the Clinical Pharmacists for the medicine management bit but in terms of booking patients in or clinical queries, you can go to the same person for all of that so, very easy.* ***Clinical Pharmacist Lead***

B.2.4 Provision of space in practice

The MoU sets out that the practices should provide suitable consulting facilities to enable the Clinical Pharmacist to undertake the role and provide suitable facilities for the pharmacy technician to support the Clinical Pharmacist role. While some of the Clinical Pharmacists have been provided with their own dedicated room, others had not due to space constraints within the practice. The challenges and benefits of providing a dedicated space were

discussed. The practice are constrained by the availability of space, however, it is worth noting as a consideration for future implementations:

> *I suppose it is different. I don't have a set room, which has been a bit of a challenge. The practice have now provided me with my own desk so that's fine for when I'm doing the medicines management role and doing some of the telephone calls and that side of things that they want me to do. They will always allocate me a room for my clinics.* ***Clinical Pharmacist 4***

B.3 Benefits of Medicines Management

Unique to the Clinical Pharmacists in patient facing roles within the Belper Five, is the Medicines Management element of the role. The Clinical Pharmacy Team aims to increase the number of post-hospital discharge medication reviews, reduce medicines waste, increase patient satisfaction levels relating to medicines use, reduce medicines related GP visits and help enable safe repeat prescribing policies.

Typically, within the usual provision of the Southern Derbyshire's Medicines Management team, a Medicines Management Clinical Pharmacist would visit the practices of the Belper Five once a week. The role of these visits is to work with the practice on the prescribing quality scheme agenda and to provide medications information support. Unique to the Belper Five Clinical Pharmacists is their medication management dual role, setting this project apart from the NHS England national project of Clinical Pharmacists in practice. The Medicines Management element of the role constitutes approximately a third of their time spent in practice.

B.3.1 Integration into the Practice

The greatest benefit of the dual role, beyond those that are typically provided to the practice through the support of the Medicines Management team, were related to the presence of the Clinical Pharmacist in the practice over the course of the whole week, rather than a visit on a single set day. Their persistence has allowed them to integrate into the practice and become a significant resource for medication related queries (as discussed previously, see B.2.3 *'Delivers expertise in medications within the* practice*'*). This was discussed by all three of the GPs:

> *Yeah, it's definitely valuable, yeah. I think, we've definitely found that we've engaged more with the meds management side of it now that we've got a Clinical Pharmacist in practice and I think it's just having that increase in that personal link. Yeah, it's definitely useful! It definitely helps to keep us on track with sort of current advice of what we're prescribing shouldn't be in with alerts and things. It helps with some of the audit functions.* ***GP 3***

> *Whereas before I might have thought, why are they wanting us to do that, why, why? That seems like a lot of work and all that, whereas yeah, the way she presents it is you know, that. I think within the first few months that she came in, she is looking at us going, is that alright? And we would be like, err, yeah, I can't see any reason why not. Now, she is like, is that alright? We are like, yeah, that's fine, because we, you know, we recognise the value of her.* ***GP 1***

Similarly, a Clinical Pharmacist also discussed the benefits of having a single practice. Although, the typical Medicines Management model, of visiting several practices, has a number of advantages. These include the advantage of repeating the same piece of work across a number of practices and learning from each:

> *I find it a lot better just coming to one place and feeling like I'm part of that practice team and they can come to ask me questions whether that's sending me a task, phoning me or actually coming in and speaking to me. So I think the practice like it that I'm there and available and it's easier than trying to juggle several different practices, but there is pros and cons with it, so when you've got several practices you can go in and do a particular piece of work and get it done in that practice and you're making those*

> *savings, aren't you? Or making those changes for whatever the new guidance says.* ***Clinical Pharmacist 4***

The Clinical Pharmacist all discussed working with and supporting the whole practice team, not only the GPs. Although, it tended to be the GPs who the Clinical Pharmacists work most closely with, largely due to the supervisory and mentoring role they have within the scheme. Other members of the team have benefited from the presence from the Clinical Pharmacists and their expertise in medicine including Prescription Clerks and Nurses:

> *When it comes to having practice meetings it tends to be the GPs that are there. Sometimes the nurses are also there and I see the GPs most days at coffee. So, it's them that I'm working most closely with. And also with the three prescription clerks, so I'll try to check in with them each day depending on whoever is doing the prescription to say 'is there anything for me? What queries have you got?' so I work quite closely with them as well. I'm hoping going forward we have just had quite a few changes in the nursing staff. So we've had two new nurses start, when both of those started I spent some time with them just going through the forms and medicines management website. They're not prescribers, but at least, if they are recommending treatments they know that it's within guidance. And where they can find that information. But I'm hoping that we can sort of, especially with prescribing quality scheme, which is COPD and diabetes I can link in with them a bit more and how we review the patients going forward.* ***Clinical Pharmacist 4***

B.3.2 Awareness of medicines management agenda

Practices described being more aware of medication related work and pharmacy issues as a result of the Clinical Pharmacist being integrated in the Practice team. All but one of the Clinical Pharmacist previously worked in the CCG Medicines Management team prior to starting in the Clinical Pharmacist role. Instead of the CCG Medicines Management agenda being communicated once a week during visits through medicines messages and tasks, the practices have a Clinical Pharmacist present in the practice throughout the week:

> *. . . more regular contact and you feel that someone's just for you, as it were, rather than visiting lots of other practices as well. So that's been really nice and also helping with our, we have a monthly medicines management meeting, so she will come to that and has been looking at ways of cascading information down to all of us, so for example, the medicines updates that they get from medicines management team, MHRA, drug and therapeutics bulletin, kind of condensing all of that and producing like a document each month with a regular information on key updates has been really helpful as well.* ***GP 1***

Significant advantage of the employment of medicines management Clinical Pharmacist in a clinical role were also discussed. When consulting with patients, not only are the Clinical Pharmacist able to provide expertly informed medication advice, the rationalisation of the medications they are taking and starting and stopping medications required, but they are also able to consider the wider Medicines Management agenda as well:

> *I guess, if you've got the Clinical Pharmacist seeing a patient and... they would be very mindful of what they would and wouldn't prescribe or when they're having a telephone consultation, or whether they're re-authorising stuff, you know, I know, for example that, you know, they… some of the Clinical Pharmacists haven't re-authorised if they know that something is going to be taken off repeat. Bath emollients might be an example, they will actually pre-empt that by perhaps sort of thinking, "I'm not going to update that, I'm going to send a letter out or let the patient know now." Certainly, not start anything new. I can't speak for sort of the other Clinical Pharmacists in other areas but, I would imagine that, that wouldn't necessarily be what they might do. They might sort of carry on over here and meanwhile you've got the medicines management team having to reverse what they've done so a little bit more of attention rather than kind of working together, I suppose.* ***Clinical Pharmacist Lead***

One of the Clinical Pharmacist did describe the potential for the focus of the Medicines Management role to change, because of the patient facing aspect. There is advantage to the continued relationship with the CCG and the dual role that has been implemented in the Belper Five:

> *The advantages are that you have someone within the practice who is still committed and focused on the CCG agenda, which is cost saving cost saving when it comes down to it. I know there is safety and things in there, but particularly at the moment it's money. And I think if we didn't have any CCG role gradually that focus would go and I'm not...I do believe in getting the best value for money and prescribing the most cost effective thing. But I think your focus would go more towards just about what the patient benefit is and you would lose that and I think that would be actually sad for that to be lost. But I could see that it would happen.* ***Clinical Pharmacist 3***

B.3.3 An appreciation of medicines management from the practices perspective

In addition to the Clinical Pharmacist approaching the consultations with knowledge of the Medicines Management agenda, the benefits are bi-directional. Of the Clinical Pharmacists who had previously worked in Medicines Management teams a further appreciation was described of the challenges faced by GPs when prescribing and the implementation of interventions. It is likely that this will influence future decisions made by the Clinical Pharmacist when completing Medicines Management work:

> *Yeah, just a different way of looking at things. It's all very well, I guess, in the previous role I would know clinically, you'd sort of follow the guidelines and you'd go this happens, this happens, this happens and so I'll prescribe this. But actually when you've got a patient in front of you, you're decision might be changed with other things to do with that patient. And I think you don't really get a proper grasp of that until you've done the course, because a part of the course you're seeing patients and you have to do your clinics and you shadow lots of people and I think until you've done that you would be more prescribing as a guideline led robot rather than taking into account the patient factors and everything else in position.* ***Clinical Pharmacist 3***

B.3.4 Influence practice repeat prescribing and audits

The MoU sets out that the Clinical Pharmacy Team will develop, support, implement and monitor prescribing and medicines optimisation strategies at the individual GP practice level strongly linked to national and local priorities. Further, specifically that the team will establish and monitor a repeat prescribing system to ensure a high level of efficiency and governance. This has been taking place across the four practices to a limited degree, due to the pressures on the time there is further scope for more work in these areas, Clinical Pharmacist time permitting.

> *I don't know if I've done anything directly with that. Obviously, by trying to introduce repeat dispensing that should hopefully lead to some waste reduction. Certainly, prescription clerks are highlighting things to me and we've also had a couple of patients who have reported that they've had things issued that they weren't expecting, which is where community Clinical Pharmacists maybe ordered stuff off their repeat slip on their behalf. And I have gone and had conversations with the local community Clinical Pharmacist about that. So I think we're doing stuff around that.* ***Clinical Pharmacist 4***

The majority of the work that has been completed concerning repeat prescribing has largely been completed by the Pharmacy Technician:

> *Yeah, so there's been some changes to the repeat prescribing policy which, I think, has just sort of sharpened it up a little bit and made the staff better at, sort of enforcing it and getting people to come for reviews for a start. Sort of repeat dispensing of controlled drugs has changed as well. So that we've got better control of scripts that would go missing and things like that so, we've got a better idea of when they've been collected and by whom. So, all of that's changed with [NAME] influence.* ***GP 3***

Further, the implementation of electronic repeat prescribing in one practice has not been without issue:

> *We've tried to get one of the practices on board with electronic prescribing and electronic repeat prescribing, repeat dispensing. But we've had lots of problems with the computer systems and the Clinical Pharmacist not being able to get the prescriptions off the spine and it's caused a lot of trouble locating electronic prescriptions that are somewhere but nobody can locate them to dispense them. So we have done a lot of work and recruited over one hundred patients to that scheme. But we've been having so many problems that we've just decided to stop promoting it as much and give the systems time for everybody to get used to them and for everything to catch up to speed.* ***Pharmacy Technician***

The Clinical Pharmacist has also been involved in writing protocol for prescriptions generated by care homes:

> *when the queries are generated from their prescriptions, she has been looking at that and trying to kind of, because its, they, they can be quite chaotic because they have got loads of patients and often patients come in for short periods on respite, so it can be quite difficult and of course, they are on lots and lots of medication, so she has written a protocol about how to manage the repeat prescribing for example at the nursing home* ***GP 1***

Along with opportunities to influence repeat prescribing within the practices. There have also been opportunities for the Clinical Pharmacist to complete audits and put in place protocols within the practice. These are in addition to audits being completed by the Medicines Management team, which would not normally be completed by the Clinical Pharmacist:

> *Yeah, there is stuff like one of the audits at the practice we're doing, which [GP] asked me to look at was and again this could fit into the CCG role, but it was patient on a high dose of Simvastatin because they're meant to be on a maximum of 20 milligrams. And it's an audit that the practice has done every year for the past three or four years just to pick up the patient and it's a CQC thing as well to show they are regularly auditing their practice. So they said 'can you pick this one up' because its medicine 'that's fine'. So I did the search and it was like three patients or something, which we could change, no problem. But then it's like putting something in place to stop that from happening in the future. So, I done a protocol on system one. So if someone prescribes Simvastatin and they're already on Simvastatin it will pop up and say 'are you sure you want to prescribe that dose?' so I'm sort of hopeful there will be none when we do it next year because I've put that in place. It's popped up once for me when I've been doing things. And I think it will work.* ***Clinical Pharmacist 3***

There is clearly further scope for setting up of protocols and completing audits within the practices. However, as previously discussed, there is a tension between possible work to complete and the time available. A decision should be made for the Belper five as a whole and for each individual practice going forward as to the nature of the work that is completed and where the greatest net benefit to patients and the practice lies.

> *I have done a little of somethings, so with the like DMARDS [Disease modifying anti-rheumatic drugs], one of the GPs was doing that so now myself and one of the admin staff deal mainly with that, so she will check all that the blood tests are up to date and I will also do the prescriptions and we have done a little bit around patients who have AKI who come out of hospital and the monitoring of those, but I think the sort of, those are sort of quite small, but have only involved one or two people, but it's quite easy to have done that, but I have not had, I have not yet tackled the larger system that will involve, I suppose, a lot more levels of staff, because you will have reception, you will have admin, GP's, me, nurses maybe so I have not started it yet, but that is something that needs to be done.* ***Clinical Pharmacist 1***

B.3.5 Medicines management position

The medicines management position, while not discussed by the Clinical Pharmacists, was highlighted as a possible source of tension by the Clinical Pharmacist Lead. The dual role of the Clinical Pharmacists could place the Clinical Pharmacist in the position where they are making decisions that conflict with the messages of the Medicines Management Team. Although, as discussed in B.3.3 *An appreciation of medicines management from the practices perspective*, this does also provide the Clinical Pharmacist with a better understanding of the decisions that other prescribers make and the rationale behind their decisions. Both the practices and the CCG should be aware of such potential for conflict:

> *I suppose they're in a bit of a... so they can see that but also, they may have the.. they may be exposed to the negative thoughts of the GPs so, they may feel a little bit sort of caught between, you know, what they're appreciated more of but also the GP.. and then having to go back to the CCG and sort of say that and perhaps be a little bit more defensive if some of the.. you know, if some of their practices' philosophies is kind of.. kind of trying to defend them, I suppose.* ***Clinical Pharmacist Lead***

B.3.6 Time and capacity

Highlighted by all the Clinical Pharmacists were the challenges of their role being limited only by the amount of time that they had during the working week. While there are a large number of tasks that the Clinical Pharmacists expertise were well suited to, there is a need to prioritise based on the practice, and where the greatest value of the role of the Clinical Pharmacist lies:

> *I think probably mixed, a mixture of both sort of behind the scenes work as it were and seeing patients, because a lot of doing reviews of prescriptions, you know, you are doing just with the computer system, and calling patients in for appropriate things or asking for blood tests, you don't necessarily always need to be seeing patients, and of course a lot of it can be done on the phone as well, you know, for more simple things. . . . . So thinking more about maybe care home medication reviews, and how we might manage that, so that's probably another thing to look at. But yeah, I think it's a mixture of both clinical stuff and also doing the admin which is so time consuming you know.* ***GP 1***

One particular challenge of the role that was highlighted was time that was taken up by meetings being disproportionate to the amount of time spent performing their role. It is suggested that there may be benefit in rationalising the proportion of time taken by meetings.

> *one of the issues on the medicines management team side has been the number of external meetings and pull-outs of the practice that the Clinical Pharmacists have had to deal with. So, again, I'm not sure we got that right from the start, you know, recognising that this person is sitting in one practice but they're having to go to exactly the same meetings as somebody who, you know, uses that information at the meetings to feed into four or five practices. . . . the external meetings, I think, would have been something to change.* ***Clinical Pharmacist Lead***

> *My biggest problem with the CCG role is that the CCG are not realistic about how much time I've got to spend in that time and what their expectations in them ten hours because a lot of it is meetings. So, I probably spend three or four hours of that ten hours a week on CCG like meetings or mandatory training or things like that, which is fine if you work full time. Four hours a week out of thirty hours a week or how many hours you do it in isn't so bad. But four hours out of ten and you don't' get to do any less; even though we've made suggestions about perhaps we could go to alternate ones and feedback to the other people. So there are things like that which is really quite frustrating. And we're getting pulled out of practice a lot to do meetings like strategic meetings and planning meetings* ***Clinical Pharmacist 3***

Through discussions with the Lead Medicines Management Pharmacist, the time was explained to include: 1) spent in preparation; 2) Travel; 3) Monthly Medicines Management team meetings; 4) Monthly Medicines Management team Clinical Pharmacist clinical meetings; 5) Monthly or 2 weekly Belper Five meetings; 6) Bi-monthly locality meetings; 7) Monthly 1:1's, 6 monthly appraisals, yearly appraisals, mandatory training (latter sometimes conducted after team meetings) (All HR related and part of the management aspect); 8) Quarterly CCG meetings; and, 9) Project work for the Medicines Management Team. It was highlighted that this is no different to any other member of the wider Medicines Management Team just that in acknowledgement of the time involved the following has been put into place: project work is reduced and an arrangement to buddy up at team meetings has been introduced thus reducing the need to attend monthly medicine management team/clinical pharmacy meetings

It was discussed that there were a number of administrative tasks, which while they reduce the workload of other members of the practice, such as the GPs, the Clinical Pharmacist is perhaps not the most appropriate person within the practice that could be taking on this work. There is scope that some of prescription queries, audit and discharges could be taken on by Pharmacy Technician or, likely more suitable, a senior administrator within the practice team trained in performing the task. A particular example that appears to take up the greatest amount of time are hospital discharge letters:

> *So the hospital discharges, which is a big chunk of work. [Pharmacy Technician] does half of them; she could do all of them. She hasn't got time to do all of them and it would probably be a bit soul destroying for her to just do that and nothing else. But they can definitely done by a technician. I could help out if there was like...you get a few that are just a complete mess and I wouldn't mind helping out with those, but they don't need me to do them. I guess, some of the prescription queries could be, but it would be quite hard. I don't know how you would split them off because some of them...* ***Clinical Pharmacist 3***

However, there is added benefit to the Clinical Pharmacist completing the discharges, beyond those associated with the reduction in the workload of other members of the practice team. Namely, the Clinical Pharmacist are able to also perform additional checks, use their experience and expertise of medications to sport potential interactions and to discuss the medications with patients where necessary:

> *Hopefully as well, by the service with discharges. Again, "discharges", was something that has always been done by the meds management team but what [Clinical Pharmacist] been able to do is to contact patients, follow them up and ring them back again to make sure there's still no confusion over changes and regimes so, again, a better service for patients who are out of hospital or have had meds changed in clinics and things.* ***GP 3***

This comes back to the discussion of where the greatest net gain for patients and practice lies. While for a number of the practices the discharges have been completed by a member of the medications management team, recently it has been decided that this is not work that is to be completed in medication management time:

> *It is/was it CCG time because the person who used to do this practice before I started this role was just a CCG person and they did discharges. So therefore I would class that as CCG work because that was what was already happening by the CCG person. But that doesn't happen for all the practices. It's quite historic to (name) practices and some of the other practices in the area. But it's not done across the board. And I think (name) is going to try and stop it from being a CCG role, which I think is fair enough, really. As long as it's done properly. But my concern is because I know the practice really appreciate them being done because it takes me about four hours a week and probably [Pharmacy Technician] another four. They'll want that done within their Clinical Pharmacist time and then that's going to impact on potentially seeing patients because the time has to come from somewhere. So it will be interesting to see how that all plays out.* ***Clinical Pharmacist 3***

B.3.7 Differentiation between practice and CCG time

The line between the medicines management and practice sides of the role are often blurred. One of the greatest strengths of the project is the combination of the Clinical Pharmacist patient facing role and the medicines management aspect. This has both benefits to the practice and the patients:

> *I think it's good just having one person in the practice because it makes it less confusing for the practice staff that they know to come to myself or the technician. But it makes it quite difficult sometimes when it's managing time. Because it can get quite blurred as to what's the medicine management role and what's the clinical role and try and divide up the diary and divide up the hours.* ***Clinical Pharmacist 4***

However, the division of time between the two main constituents of the role and what constitutes medicines management work, and what is completed in medicines management time is often less than clear:

> *No, it's not clearly defined and I don't think it ever can be clearly defined because there is so many things that you would do as a CCG role, which would also benefit the practice and the practice role as well. So, I don't think you can ever say 'right, I'm having practice time now I'm not doing any CCG work' and you can't say 'I'm doing CCG work' because if have a query where does that fit? If it fits on either side? And, ultimately, if you're doing it to benefit the patient then it should merge anyway.* ***Clinical Pharmacist 3***

One particular example of work completed by the Clinical Pharmacist within the practice which exemplifies this are work for the prescribing quality scheme (PQS). Typically the PQS work is facilitated by the Medicines Management team and then completed by the practice. As the Clinical Pharmacist has a dual role the Clinical Pharmacists can also do the work in the practice time:

> *That's prescribing quality scheme. So as part of my CCG role we have to inform the practice of this and educate them and sign them up to it and encourage them to do the work. But them because I'm part of the practice then I could do the work in my practice time. So I've done quite a bit of the prescribing quality team work for the practice, liaising with the right GPs and nurses as well. But, I guess, I've led on that for the practice. Then, I guess, ad-hoc audit thing to do with medicines, which is probably what I should do more of but, I don't get enough time to do. And, again, some of that CCG, but then there are particular things as a practice that they want to look at because they're fairly proactive and they've asked me to do a review of all the patients on this drug and see if there is a problem and see if this is being done or not. Particular topical items or safety things or that sort of thing.* ***Clinical Pharmacist 3***

Another example are practice audits. These are specific to each practice. These would typically be completed by another member of the practice, likely a GP or a nurse (See B.3.4 *'Influence practice repeat prescribing and audits'*).

B.3.8 Second Practice

Additional pressure has been placed on the CCG time of two of the Clinical Pharmacists, as they are covering the medicines management of another practice each. From conversations with the Lead Medicines Management Pharmacist this is an unavoidable commitment of members of the Medicines Management Team to cover other practices for staff shortages and when teams are short. This comes out of the Clinical Pharmacist Medicines Management time:

> *I'm covering an extra practice at the minute. I said I've got to spend half a day a week at another practice; obviously, it gives me half a day a week less time. Even though it's meant to be CCG time there is no CCG time, because it's already swamped with meetings in that practice and I've got to do my CCG*

work in this practice as well in that time, which includes, in theory four hours of discharges in that two hours. It just doesn't add up. ***Clinical Pharmacist 3***

B.4 Supporting the Clinical Pharmacists

The integration of the Clinical Pharmacist, given the formative nature of the role and the varied experience of the Clinical Pharmacist has been aided by the support offered by both the practices and the CCG. The practices have met, and likely exceeded the requirement of supporting the induction of the clinical pharmacy team members into the practice, as set out in the MoU. Additionally, there were no mention by the Clinical Pharmacists around issues relating to access to IT systems, or issues relating to clinical system support, training, data collection or reporting. Clinical Pharmacists integration and support will be discussed.

B.4.1 Integration into the practice team

The nature of the integration of the Clinical Pharmacist into the practices necessitates close relationships with GPs, nurses, receptionist and other staff within the practice to maximise their benefit. There was no doubt from any members of the Clinical Pharmacist team of the support received from the practices in becoming integrated members. The relationship is bi-directional, not only did all of the Clinical Pharmacists discuss receive support from existing members of the practice, but as previously discussed the Clinical Pharmacist are able to offer medication related expertise to all members of each practice:

Yeah, yeah, so I think it's really nice because they feel like they are yours a bit more, so kind of get to know, perhaps, and get to have a better working relationship. The system that we use is task based, so you know that having her in more days you are going to perhaps pick up messages more frequently, although the time is split obviously between doing patient facing stuff and medicines management and you know, it's just nice to have, yeah, I suppose that more regular contact and you feel that someone's just for you, as it were, rather than visiting lots of other practices as well. So that's been really nice and also helping with our, we have a monthly medicines management meeting, so she will come to that and has been looking at ways of cascading information down to all of us, so for example, the medicines updates that they get from medicines management team, MHRA, drug and therapeutics bulletin, kind of condensing all of that and producing like a document each month with a regular information on on key updates has been really helpful as well. ***GP 1***

I have never felt that any of the GPs or nurses or anybody here have been anti-somebody else. They are all like this is brilliant, we have got somebody else in. It could save some of their time, possibly, but also the patients have got somebody else that they can talk to, who they can focus on. Problems with their medication and spend that time with them that they have recognised that they needed to do but haven't been able to do it. So, they have all been very, I feel, they have all been very happy to have me come in, or any Clinical Pharmacist come in really. ***Clinical Pharmacist 1***

Within the practice, the Clinical Pharmacists described working most closely with GP. It is likely that it is the GPs that derive the greatest benefits from the presence of the Clinical Pharmacist due to the nature of the work that the Clinical Pharmacists are able to take on and the support they are able to provide. However, the support also extends to other members of the practice team who perform medication related tasks, including the prescription clerks, nurses and administrative staff.

Yeah, so, so they have a good relationship with the repeat prescribing clerks who are, you know, helping process all of our repeat prescriptions, that's their job, essentially to make sure that system runs smoothly, so good working relationship with them is important. We have another Clinical Pharmacist here of course so working very closely actually . . . so it's about making sure that they are able to work together, not treading on each other's toes and often the projects, you know, they might be leading and

> *running the projects, working together as a team, but also . . . a big variation of work that they can split between them.* ***GP 1***

B.4.2 GP mentors

Within each of the practices of the Belper Five, GP leads were identified and support the clinical debriefs, responding to the needs of the Clinical Pharmacist and to provide general support/monitoring as set out in the MoU. Clinical Pharmacists developing their experience working with patients were described as effectively supported in the practice by the GP lead at each of the practice (as described in B.5.1 *The Clinical Pharmacists Progression*):

> *I've got to have meetings. I did have a meeting a couple of weeks ago with her and continue to do that because she's prescribing lead as well for the practice. So it will fit in with the medicines management side of things. But we also said that going forward she will continue to observe my clinics, occasionally, just to see how I'm doing and also as I develop different clinical skills and maybe start seeing different patients to do that as well. So if I was to go down the route of seeing patients who are on an antidepressant not maybe solely on an antidepressants but if the antidepressant is given as part of the medication reviews then sort of the questions that I would be asking and doing and sitting and observing some clinics and see how I manage with that.* ***Clinical Pharmacist 4***

Further, the single Clinical Pharmacist who completed their non-medical prescribing training during the first year of the project, was also supported through the training and experience by their practice GP lead. This is a good example of the developed relationship and excellent support offered:

> *that's basically involved, sort of overseeing the prescribing course that she's been through and sitting with her, usually, at least once a fortnight and often once a week, watching her consult and her watching me consult and then having regular reviews of her progress and completing her paperwork. Making sure that she's seeing the right kind of things in her clinic, having the right kind of exposure to types of cases that will be useful for learning, providing tutorials alongside, sometimes with or registrars as well. Yeah, that's benefited.* ***GP 3***

This was corroborated from the point-of-view of the Clinical Pharmacist. The support of the Clinical Pharmacist during the prescribing course constituted a significant commitment of time on the part of the GP. However, this was of considerable benefit to the Clinical Pharmacist:

> *It's worked really well, obviously, with me doing my IP course I've had to spend a lot of time with her so I've probably spent more time with my GP mentor than the other Clinical Pharmacists have. Because out of my ninety hours I had to spend half of them forty five hours with her . . . So, we spent a lot of time together and she's been a real support and she's been very...give me a lot of praise and give me a lot of constructive feedback 'you might consider doing this differently like this' and when she first sat in on my clinics it was like you feel like you're in an exam situation almost and being observed. But as I say, as it went on it was fine just having her sat there in the background and it was okay doing the consultations.* ***Clinical Pharmacist 4***

The GP mentors also have befitted themselves. One GP discusses how the relationship is a two-way process. Not only can the Clinical Pharmacist ask questions of the GP, but the GP is also supported by the Clinical Pharmacist in the decisions that they are making:

> *we have, messaging and tasking on the computer system. So, she can ask us questions, she can answer our questions usually that way round. We have a coffee chat in the morning, 10.30 for 20 minutes, she was there this morning, so that's an informal but often very useful way of communicating. She comes to*

the partner's meetings. So, we have got various levels of communication there where we can support her and she can support us, because it's very much a two-way process. It's not, us being kind to her all the time, she is very kind to us a lot of the time, so yeah. ***GP 2***

B.4.3 Clinical Pharmacist Lead

The Clinical Pharmacist Lead acts as a clinical mentor to the Clinical Pharmacist and Pharmacy Technician, supporting their development. They were discussed as a critical part of the support of the Clinical Pharmacists and essential in facilitating their integration into their practice. Their role, as set out in the MoU includes liaising with the practice team to ensure that all staff understand the role of the Clinical Pharmacy Team and ensure suitable patients are referred to them; working with individuals to develop a Competency Assurance Framework; and, liaising with the Belper five Clinical Pharmacist Lead to discuss progress and performance of individual Clinical Pharmacists to assist the appraisal and 1:1 of the individuals.

when they have had issues around sort of workload and things that have happened, they've used the meetings to come forward and sort of say something so, that's not.. I've not picked up on anything around support that's been a problem, so I know that, certainly here, and I know in other practices, because we've recently talked about how many clinics they all do, they all have at least one sort of debrief session, even if it's once a week, where they can bring, you know, patients that they've seen and talk about and so that's all still in place. And then I know they have sort of open access to meetings and, you know, different things that go not so... more that will come to our sort of practice meeting and different things so they've got a voice in and a way of kind of communicating. I haven't picked it up that there's been issues around the sort of level of support that they've had, really, from the practices. ***Clinical Pharmacist Lead***

The Clinical Pharmacist Lead has been working within a practice in the Belper Five locality as a patient facing Clinical Pharmacist for a number of years. This was also perceived as a benefit by the Clinical Pharmacists for both peer support, but also in order to help identify the type of patients that they are to see, their competencies and any gaps in their experience:

We've had some discussion as part of our (name) Five meetings. So it's really great that we've had that peer support and not been completely on my own in this new role. So it's been good to speak with the other three Clinical Pharmacists and with [Clinical Pharmacist Lead] who has been doing the job a lot longer. About what type of patients they are seeing and go through the competency framework and sort of highlight then any sort of gaps that there might be and, you know, we've all got our own clinical expertise on where our knowledge is better in certain areas than others. ***Clinical Pharmacist 4***

B.4.4 Peer support and debriefs

There is currently a single Clinical Pharmacist in each of the practices within the Belper Five, with the exception of the Clinical Pharmacist in a practice with the Clinical Pharmacist Lead. The Clinical Pharmacist are supported within the practices by the GPs, GP mentors and the rest of the practice. Consequently, the Clinical Pharmacists described the benefits of the support network that the CCG medicines management team afforded.

I suppose you have less contact with other Clinical Pharmacists because we only really have about five, but then through the CCG so that's where you get the network of other practice Clinical Pharmacists. And I guess it helps that I've worked in this area for a long time. So I do know the other Clinical Pharmacists in the area, so I can ring someone up or email someone if I think they've got a special interest in something or they've done a piece of work. I've got those relationships from my previous work to just say 'have you done this?' or 'I heard you've done this. Can you share it?' so I don't feel isolated, particularly. ***Clinical Pharmacist 3***

Two of the Clinical Pharmacists described that a move into primary care setting may be isolating compared to previous roles. Employment by the medicines management team have helped with providing Clinical Pharmacist peer support:

> *I think it is because when I did the practice based commissioning work in 2010 to 2013/'14 I was self-employed and I was a Clinical Pharmacist on my own in a practice and I wasn't able to go to team meetings or be part of it. So although I knew part of the staff and I will still contact them from when I worked with them it was very lonely at times. And you haven't got the peer support or 'I've got this query. Can I run it past you?' that sort of peer support. So being in this set up where I've got [Clinical Pharmacist Lead] and the other three Clinical Pharmacists to have as peer support and train with and learn from each other. It has been really helpful but then it's also good having the rest of the medicines management team to also have that and to know what's coming from a work point of view.* ***CP4***

It is likely that this depends on the previous experience and background of the Clinical Pharmacist as well as the setup of the practice, as this was not described by all of the Clinical Pharmacists.

> *I don't feel isolated at all, actually. I think I'm very fortunate with the practice I work at that all the GPs are very approachable and the nurses, the whole practice is very approachable. So I feel part of the practice team, definitely. And when I'm downstairs doing a clinic when the patients are finished everyone has the door open and we pop in and ask each other questions and everyone has a tea break at 10.30 up here, well, the clinical staff. . . . So, I feel well supported within the practice and I think that in addition with our (name) practice Clinical Pharmacist team that we meet regularly as well. That's my other side...because I think if I didn't have that it could feel isolating as the only Clinical Pharmacist. But, because I've got that support that's the other side of it, really.* ***Clinical Pharmacist 3***

B.5 Continued Professional Development

The project with Medicines Management Clinical Pharmacists in patient facing roles within practices in the Belper Five brings together individuals with a diverse range of skills. The continued development of these skills was discussed by GPs and Clinical Pharmacists alike as essential.

B.5.1 The Clinical Pharmacists Progression

The prior knowledge varied between the Clinical Pharmacists, but all stated that the Practices had been very supportive of their development. The progression of the Clinical Pharmacist within the role has been considerable. While all Clinical Pharmacists discussed having some aspect of consultation or at least patient facing experience from previous roles, their experience has developed over the first year of the project:

> *She is constantly building up her kind of expertise and her scope as it were so initially she was quite . . . anxious about the role, having you know, it's a patient facing, completely you know, clinical consultations, so we allowed for that and gave her quite a bit of a kind of warm up period as it were, and she is very comfortable doing hypertension, asthma reviews, thyroid, developing skills in COPD and also she is very interested in the care home kind of, chronic patient de-prescribing so being able to help a lot in that respect.* ***GP 1***

To facilitate the Clinical Pharmacist improvement of consultation skills, a number of the Clinical Pharmacists have seen a broad range of patients over the first year. Need was expressed to tailor the patients that the Clinical Pharmacist see going forward to maximise the benefit of the sessions, particularly the more complex patients with chronic conditions and/or polypharmacy:

> *Initially, it was a good group of people to see just to sort of build up my confidence in consultation skills, because I had never really had a consultation with a patient. I am not sure it's the right group of people for my skills in terms of some of the nurses could manage those patients just as well as I could, it's about trying to find the right patients to manage. So, the, some of the asthmatics who are quite simple, probably don't need to see me, but the people further up on more complex therapies, they probably would be more appropriate.* ***Clinical Pharmacist 2***

The types of some of the clinics that the Clinical Pharmacist have been running has also changed as experience developed:

> *So I did hypertension as my topic. But then after I qualified and you start to branch out. So then I started doing sort of more cardiovascular risk things and I developed doing COPD within the practice. I spent time with the specialist nurses. So I built up knowledge in other areas after that. But hypertension was what my original focus was.* ***Clinical Pharmacist 3***

B.5.2 Training

The importance of, and need to continue to develop, the clinical skills of the Clinical Pharmacists were highlighted. The Clinical Pharmacist all felt their consultation skills had developed significantly over the past year. The prior knowledge varied between the Clinical Pharmacists, but all stated that the Practices had been very supportive of their development over this time.

> *I think the training is useful because we have clinical training days once a quarter. And I would miss those if we didn't have them and I'm a bit worried because there's rumours or things are being mentioned that they're looking on what's going to happen with those and I'm thinking 'well actually, that's the bit that I really value'. That and the peer support is really what I want from the CCG. So there are definite advantages. But it's just not right at the moment.* ***Clinical Pharmacist 3***

> *Yeah, yeah, so that's, really from a clinical.. yeah, from a clinical point of view, I suppose, so, we meet with (started off meeting every week).. it's such a long time ago. I think we met.. No, we met every fortnight so, every two weeks we'd have a meeting for a couple of hours and it was quite general stuff to start with. Quite a lot of that was around sort of competency frameworks and, you know, governance type issues.* ***Clinical Pharmacist Lead***

The Clinical Pharmacists have also organised their own ad-hoc training within the practices to develop skills relating to the clinics they have been running.

> *It wasn't the nurses...they had specialist respiratory nurses. So I went to spend time with them and the GPs within the practice as well. Although, it was at a time, actually, when no one knew a lot about COPD because COPD was quite a new thing. So I almost did it and then helped the practice nurses to build up their confidence to deal with it as well. Because they were doing the spirometry, but didn't really know...* ***Clinical Pharmacist 3***

In addition to the training provided as part of the Belper Five Clinical Pharmacists regular monthly meetings, additional training was completed on consultations skills. All the Clinical Pharmacists attested to the value of the consultation skill training provided by one of the Belper Five GP mentors. This training offered the Clinical Pharmacist, who all described having a range of experience coming into the scheme.

> *We have done some work with communication stills as well because I think that's almost the biggest challenge, because you are going from doing a role where actually, a lot of them haven't been seeing patients on a daily basis, yet they have got clearly a brilliant knowledge base, lot s and lots of experience,*

> *but then translating that into you know, sitting face to face with a patient, is I think a massive challenge.* ***GP 1***

Discussed from the point of view of the Clinical Pharmacists, all attested to the usefulness of the consultation training they received. This was not only true for the Clinical Pharmacists who did not have as much experience working in patient facing roles, but also those with more experience.

> *So she did an initial session with us where she talked through consultations and its patient interview and shared agendas and going through how it's important to get the patients' ideas, concerns and expectations, which was something I hadn't really come across before and it didn't really figure in how I did consultations as a community Clinical Pharmacist. So it was a different way of thinking. But then we had another four sessions where we had actors and so we had the same actor for two of the sessions and then two different actors . . . they were really useful having the actor there playing the patient and sort of changing how they would do it. So, we were observing each other. It was like, so now I know, being the Clinical Pharmacist, what's going to happen in this scenario. And it's like, no, it didn't happen like that. So the patient would change as to whether they were going to be a bit more awkward or not.* ***Clinical Pharmacist 4***

The consultation skills training provided to the Clinical Pharmacists was based on the GP mentors previous experience teaching consultation skills to GPs:

> *We did some work with them . . . on clinical communication skills and just breaking down the history taking and explanation and planning part of consultations, which I think went really well actually . . .[I] used the framework that I have been using before, so the consultation model, the Cambridge Calgary method and just structured, did we have five or six? I can't remember off the top of my head, I think five sessions, using actors, so simulated patients going through role plays and kind of learning as they go, and group learning, that sort of thing, so it was a really, yeah, it was really good I feel that they gained quite a lot looking at the feedback. I think they have all grown in confidence a lot over those few months and felt a lot more, you know, happy using the sort of skills that we were talking about how to use and talking to patients, so yeah, it went well.* ***GP 1***

B.5.3 Non-medical prescribing

An independent prescribing qualification is not essential for Clinical Pharmacists to undertake a patient facing role. However, it allows the Clinical Pharmacist to make autonomous prescribing decisions and be responsible and accountable for the clinical care of patients within their area of clinical competence (Royal Pharmaceutical Society).

The non-medical prescribing courses completed by all of the Clinical Pharmacists was invaluable in the development of particular areas of expertise, and consultation skills. While many of the Clinical Pharmacists stated that the ability to prescribe was useful, the consultation skills that were covered in these courses were considered essential.

> *I think that's helped no end. I wanted to do...once I finished my diploma in 2008...I wanted to do my independent prescribing course after that, but if I did the course there didn't seem to be the role too then use it. So it was like, I don't want to get a course qualification and not be able to use it. So, I felt at a bit of a disadvantage when I applied for this job because I didn't have the qualification. But, actually, it's worked really well for me developing the role and developing my clinical skills and consultation skills over the last six months/ year. But I am able to put into practice straightaway what I've learnt. So, it's been really good from that point of view that hopefully I get the results mid May, that's all okay and I get to go onto the register and become an IP and I will be able to use it straightaway from day one of getting the go ahead. I think it's been really good doing it on the go.* ***Clinical Pharmacist 4***

Clinical Pharmacists who were not yet able to prescribe did not find it caused an issue with patients and were able to ask the GP to sign prescriptions.

> *It's not causing any issues. It will be good when I can prescribe but I will still maybe want to run certain things past a GP anyway. But what's been happening at the moment is if I've wanted to issue a prescription I've been able to issue a prescription and either pop in to see whoever the on call doctor is, if they're in between patients, the same time as me or I've left the prescription with reception and the patient has just waited in the reception area and the receptionist has gone in to see one of the GPs in between patients to get them to sign the prescription. Or if it was making a change to the patient's medication I've said to the patient 'I want to discuss through with one of the GPs after morning surgery. I'll give you a call back later today' I've discussed it with my debrief and the GP has gone 'yes, I'll have to issue a prescription' we've sent a prescription directly then to whichever chemist the patient uses and I've phoned the patient later in the day to say 'the prescription is now waiting for you. This is what we decided on' so it's not caused that big of issues not being able to actually issue a prescription then and there.* ***Clinical Pharmacist 4***

Furthermore, the independent prescribing qualification was seen as important for the development the patient facing pharmacy role for future Clinical Pharmacists:

> *I think you can do big chunks of the role without having that qualification. But I think the journey you go through as you undertake that qualification changes the way that you think about prescribing and your role and the patients. So, I think, you could but it wouldn't be as good. I would say.* ***Clinical Pharmacist 3***

B.5.4 Insurance

A single Clinical Pharmacist highlighted that, while they are a qualified NMP they are making prescribing decisions, but they are not signing prescriptions. This was discussed as being because of concerns about the level of indemnity insurance offered. While this clearly is an issue that should be addressed, as previously discussed, the decision making and consultation skills associated with the NMP are as, if not more important than the prescribing.

> *No, I'm not signing prescriptions. Yes, I've been making prescribing decisions since I've started. If that makes sense. And I need to get that sorted out because I should be signing the prescriptions . . . I wasn't very happy about our insurance cover. So I think I was reluctant to actually sign prescriptions because of that. I'm still a little bit 'Hmm' about it . . . historically I've always had my own indemnity insurance working in what's deemed as a patient facing role and because a load of other Clinical Pharmacists nationally are in patient facing roles, insurance premiums went up massively and I always funded my own. Not because I absolutely need it, but because it was recommended. Otherwise you are reliant on your employer and they might not always have your best interests at heart. But the CCG weren't willing to pay for this higher level of insurance because of the money. I'm not willing to pay thousands of pounds for it, so now I'm left with just the CCG NHS indemnity insurance, which, in theory it should be okay. But I feel less supported.* ***Clinical Pharmacist [redacted]***

B.6 Monitoring and Evaluation

The monitoring and evaluation of the project of Clinical Pharmacists in patient facing roles within the Belper Five was loosely defined in the MoU: *"To monitor the performance of the clinical pharmacy team model SDCCG will work in a collaborative approach with the Belper GP practices. Both parties shall agree a work plan with agreed outcomes, targets and indicators. The work plan will be agreed at the beginning of each financial year. Any in-year revisions shall be mutually agreed between both parties."*. To date the monitoring and evaluation has consisted of the Clinical Pharmacists collecting data on work done (Read Codes / SNOMED). This evaluation provides further evidence. There is a need, going forward to collect patient feedback on the scheme.

B.6.1 Read Coding (SNOMED)

All of the Clinical Pharmacists expressed an appreciation of the necessity to demonstrate the impact of their role within the practice. To date this has been achieved through recording practice work done on the practice systems (SYSTEM ONE and EMIS) through using Read codes. The work to be coded was originally determined by the Pharmacy Technician, in consultation with the Clinical Pharmacists. However, a number of issues were highlighted pertaining to the recording of impact. Namely, the time taken for each intervention to be recorded on the system:

> *it's not really working. Well, it is working. I'm recoding things that I do, but the original list wasn't practicable or workable. It was told it wasn't practical or workable and we were ignored. So therefore there is zeros and things because the most important thing is to see the patient and get everything recorded on the patient records and yeah, you do have to recode something, but it is not always...you can't recode ten different things in one consultation. You just haven't got the time and it would just clog up the patients' record with a load of recodes for administrative purposes. So we shortened the list, which is better as of very recently.* ***Clinical Pharmacist 4***

Complaints of the space that is taken up by coding on patients records that only serves evaluation purpose:

> *It takes too much space upon the record. Some GPs have said they didn't want such a big entry going into the records when they've done a consultation. I know one of the Clinical Pharmacists used to type quite a lot of information, which was all relevant and I think as much information as you can get in there is good, that's relevant. But the GP then at debrief said we don't want that much information because it clogs up the record. So you're stuck because the GPs don't want such a lot of information on the screen. But then they're not recording enough because the free texting and not entering specific codes. Pharmacy Technician*

There was also a perception of inconsistency in recording between practices:

> *Well, I know we've been given a long list of recodes and I've not been using all of those. I think the list got shorter in the week at the meeting last week. But you've only got fifteen minutes that you're seeing a patient. So you're seeing a patient. You're having to have a quick look at the notes, see the patient and then writing up the notes in that fifteen minutes. So you can't code for everything and the practice don't want me to do that either. I don't think if they saw my entry in the record and I'd coded...so if I'd had a consultation about starting statin I would code that 'statin declined' because it's there then and it's needed for (quaff ?) but I wouldn't be going patient compliant with medication, no side effects reported and all the other codes. I can't think what's on the list but I wouldn't be going through putting lots of lines in the record. CP4*

Further that the codes that have been chosen not representing the absolute range of tasks performed by the Clinical Pharmacist:

> *There is a lot of things that are missing, in my opinion. The Clinical Pharmacists when they're reviewing patients do a lot of work that's not being collected that is being coded and would be simple to just run a search for and collect that data. But it's not included in the measures. So there are things in that measure sheet that shouldn't be there because they're not relevant and there is extra things that should be in there that are missing.* ***Pharmacy Technician***

Finally, it was also highlighted by all of the Clinical Pharmacists that the evaluation took up a considerable amount of their time, but also that it was of indefinite length.

> *I understand we have to do it and have been doing it for data collection purposes. But on a very long term basis I don't think we should have to continue to do this. However long we're doing this as a project – one year, two year, three years. But there should be a date where we say 'right. We've got some information now just get on and do your job'. It's not good use of time to continue to do that. And it's very hard as well from the recoding point of view. Like we're meant to report on how many queries we've answered.* ***Clinical Pharmacist 3***

Based on these issues and discussions, it is suggested that many of these issues could be resolved through a more thorough snapshot that is completed at intermittent points, rather than the present continuous evaluation. For example, a detailed evaluation of the extent of the Clinical Pharmacists work that takes place over a one to two week period (depending on the frequency) one or two times a year. Not only would this provide a detailed representative snapshot of the Clinical Pharmacists work, it would define the limits of evaluation.

B.6.2 Patient feedback data collection

To date, data collection supporting efficacy of Clinical Pharmacist in patient facing roles has focused on work done by the Clinical Pharmacist. The MoU sets out a number of items for monitoring that would only be possible to collect directly from patients themselves; namely, improvements for the patient experience and increased patient satisfaction levels. While anecdotal feedback has been positive, all GPs and Clinical Pharmacists identified the need for patient satisfaction data to be collected over the coming period:

> *No, we have not collected any formal, but as I said, I suppose I have had one or two comments back from reception staff where a couple have gone in. I think I had a couple maybe that were in, so husband and wife came in but I was just seeing the wife or something, but then on their way out they were booking another appointment or something, they were like, just sort of commented, that was really good, that was really good service and once at the end of the appointment, just saying like, that has been really good to have that time to focus on medicines. So, I suppose people probably don't tell you if it's bad, but I think overall, there has been some people who have made a positive, you know, positive comments and been really happy with the idea and like, oh, are you here permeant then? And I am like, yes, obviously, that, someone is asking like, oh, will I see you again? Are you going to be here, is this something that is going to stay, because they have found it useful. It's good.* ***Clinical Pharmacist 1***

Other avenues for patient satisfaction could also be explored. One of the Clinical Pharmacists attended a patient participation group to discuss their role:

> *They were very receptive to it and they had asked me to go back and speak to me again once I've been a bit more established into the role. So I will probably go and speak to them again once I've got my IP course and started to use that a little bit. Because that will be a big change in how the role currently is.* ***Clinical Pharmacist 4***

There would be benefit for the collection of data on patient satisfaction to support the data currently collected on Clinical Pharmacists and this report.

B.7 The Pharmacy Technician

The pharmacy technician within the Belper Five supports all four practices, with their time split between each practice. The MoU describes the provision of Pharmacy Technician support as Extra Medicine Management Technician resource will support the Clinical Pharmacist as directed by them, for example identifying patients who are suitable for review. With the added objective of developing the role of the technician to support the Clinical Pharmacists' objectives. One of the objectives of work package two was to identify the role of the Pharmacy Technician within the Belper five.

B.7.1 Role

Given the complexity of the role of the Clinical Pharmacist previously described it is unsurprising then that the Pharmacy Technician role was equally diverse. The time is split 0.6 versus 0.4, with 0.4 time for Belper Five. So the majority of the Pharmacy Technicians day is spent doing medicines management work for the team and then a small amount of time spent on other items:

> *It's doing anything; really, that the pharmacy chooses to give me that they've been asked to do. So the GPs might want them to do a separate audit that the rest of Southern Derbyshire medicines management team aren't doing and it wouldn't' normally be part of our role. But because the (name) Five Clinical Pharmacist are taking on extra work then I get asked to help to just gather information or whatever they need me to do, really.* ***Pharmacy Technician***

A considerable amount of the Clinical Pharmacist time is taken up by discharges:

> *So, I guess, historically four of her CCG hours are doing discharges and then she's doing the other CCGs cost savings, which is work within that time. But she only comes one day a week, usually. So she's not actually doing ten hours. Because [Pharmacy Technician] too gets pulled out to do other stuff, so therefore I think a lot of her time gets lost on meetings and administration type roles, which she shouldn't really be doing. So she doesn't have the time to spend in the practice that she should have. So for the (name) bit of the role she is struggling because she's not got the time to develop that.* ***Clinical Pharmacist 3***

The broader role consists of the following items as highlighted in the interview with the Pharmacy Technician, this is not exhaustive:

- Review patients, filtering out patients that are suitable for work being completed by the Clinical Pharmacists
- Assisting with the prescribing quality scheme
- Data collection
- Setting up searches for a large range of measures.
- Going into care homes and review their medication.
- Switches for cost savings
- Contact with many factories of inhalers to get placebos for demonstrating to patients new devices.

B.7.2 Benefit of the Pharmacy Technician

Pharmacy technician are an important part of the model of *'right patient, right clinician'*, as previously discussed B.2.2 *The appropriate practitioner seeing the appropriate patient*. Consequently, the Pharmacy Technician is a critical part of the Belper Five:

> *The only thing is they need Pharmacy Technician time. So I wouldn't advise, I know there are lots of people who are having Clinical Pharmacists with no technicians, but actually the Clinical Pharmacist isn't going to be working to the top of their expertise, which is what the whole idea about the whole GP, everyone should be working to the top of their expertise. So the GPs are only seeing people that no-one else can see. I'm only seeing people that the technician or the practice nurse couldn't see. So you need...I think a Pharmacy Technician is key to stop you getting pulled into things that are not at the top of your expertise. You can do them quite adequately, but someone else could do them.* ***Clinical Pharmacist 3***

The Pharmacy Technician eases the medication related administrative work load of the practice and the Clinical Pharmacists. In the same way as the Clinical Pharmacist is able to take on a considerable amount of the medication

related workload within the practice that would usually be completed by the GP, the Pharmacy Technician is able to do the same. Predominantly this consists of rationalising discharge letters:

> *The technician currently, when it's my day off or annual leave or I've been of sick, will do the discharges and the outpatient prescriptions and they can continue to do that aspect of things. They can certainly do and they have done in the past stuff around care homes and waste audits and reconciliation with more charts. So there is certainly a lot of scope of things that they could be doing and they could also be doing some of the domiciliary visits. So like the lady I'm going to visit tomorrow, I'm just going to see what medication she's got in her house and to see what's she's currently taking. There is no reason why a technician couldn't go and do that. My highlights and issues is then I explain to the patient about, but if a technician went and said this is the thing it may mean then that a GP or Clinical Pharmacist go and follow it up. It maybe that there's no further requirement for any-body else to go. A lot of the medicines management work so a lot of the stuff that comes off the task list. So maintaining and updating the forms, looking and reviewing of red black specials, high cost drugs, populating data collection sheets for any audits and reviews all the press script and pincer searches. She will import into all of those. So there are lots of things she's doing.* ***Clinical Pharmacist 4***

There is scope for increasing the effectiveness of the Pharmacy Technicians time. Some of the Pharmacy Technician work could be completed by another member of the team. For example discharge letters, there is potential that some of this work could be passed to trained administrators for the filtering of discharge letters, eliminating those which need to be read and filed, but do not need auctioning, passing those with items that need to be actioned on to the Pharmacy Technician, Clinical Pharmacist or the GP:

> *They could filter some because a lot of them don't even have any medication on. But somebody still needs to read the whole thing because it might say 'we noted this blood test was extremely high. Can GP review?' but it's hidden it the text and nobody had picked that up unless they sat and read it. So somebody within the practice, yeah, they could easily sit and read them all and if they came across something like that then pass it onto a GP or a nurse for reviewing. So there is quite a lot cataract operations that you don't add any medication because the medication is only for four weeks and then it's stopped. And they've been given the full supply from the hospital so you don't need to add anymore. So they could all be filtered out. A lot of infusions that the patient has had at hospital. They all get a discharge letter so they could all be filtered out. So you could filter them. But it's just making sure that all the filtered ones are still read because there are still things on there.* ***Pharmacy Technician***

B.7.3 Support within the practices

Like the Clinical Pharmacist, the Pharmacy Technician is also supported within the practice. While there is no formal arrangement, as with the Clinical Pharmacists, the Pharmacy Technician is aware of members within each practice who they can consult when the work that they are completing exceeds their competence:

> *I will obviously come back to the practice and discuss things with the Clinical Pharmacist or even a GP, depending on how urgent it is and how serious. And I could also arrange for the medication to go on blister packs for the patient from the pharmacy if that's necessary. So it's going to be mean a lot of liaising with the pharmacy, a lot of liaising with GPs and Clinical Pharmacists and might even include social services if they're having difficulties at home that they say to me 'I'm not able to stand at the sink anymore' or something. Most practices now have got a care coordinator so they can organise extra services for patients and do it on their behalf. So I do on a couple of occasions in practices I do sit with a care coordinator and listen to what they're doing. And think that will be really useful if I see a patient that's needing a listening service or something like that. If I go to see somebody and they're really depressed and it's because they don't see anybody. I know what other services are available just through listening what care coordinators do, which is really useful.* ***Pharmacy Technician***

Annex K: Work Package 2: References

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Annex L: Work Package 2: Interview Schedule Clinical Pharmacist

Background of the Clinical Pharmacist

1. Could you start by telling me about your career as a Clinical Pharmacist and how it led to you starting in the practice?
   - *Number of years' experience?*
   - *Background – community or hospital pharmacy?*
   - *Worked in a practice?*
   - *Years in primary care?*
2. What experience and competencies do you have that makes you suited to the patient facing Clinical Pharmacist role?
   - *Previous patient facing role?*
   - *Non-medical prescribing?*
   - *Run clinics before?*
3. What were your motives for becoming involved in the scheme?
   - *Attracted by:*
     - *Patient facing?*
     - *Use of prescribing qualification?*
     - *Working as part of the practice team?*
     - *Increase in clinical focus*

The Patient Facing Role

4. What are your responsibilities as a Patient Facing Clinical Pharmacist?
   - *Patients*
   - *Med Man*
   - *Admin*
   - *Clinics*
   - *Chronic condition management*
   - *Multi-disciplinary working*
5. Do you feel your role is clearly defined?
   - *Are you asked to do things that you don't think are part of your role / on your job specification?*
   - *Are there things that you no longer do?*
6. What are the advantages to a patient of seeing a Clinical Pharmacist?
   - *… to the practice?*

The Practice

7. How do you feel about working within the GP practice?
8. Do you feel that other practice staff have been receptive to you taking on a patient facing role?
9. Which members of the practice team do you work most closely with?
   - *Has this changed?*
   - *How has this working relationship developed?*
10. Do you think that inter-disciplinary collaboration within practices improve patient's outcomes?
    - *In what ways*
    - *Examples?*
    - *Waste time and add to treatment costs?*

11. Do you feel patients understand your role within the Practice?
    - *How do you introduce yourself?*
    - *How is your role explained to patients?*
    - *What reasons have been given for not wanting to see Clinical Pharmacist?*
    - *What benefits do patients see/ or perceive*
    - *What are the benefits to patients?*
12. What recommendations would you make for improving future patient facing Clinical Pharmacists integration into a Practice team?

Responsibilities

13. Could you talk me through a typical day for you at the practice?
    - *Distribution of time over week – clinics, visits, admin, time with technician*
    - *Number of patients seen*
        - *Type of patients e.g. Chronic disease / medication review*
    - *Do the activities described match with responsibilities described in (4)?*
        - *Specification suggests should be doing these…*
14. To what extent has your prior experience prepared you for the consultation and clinical aspect of the role?
    - *Are there any aspects you are less confident on?*
    - *Have you received any addition clinical skills training?*
15. How does this role make use of your medicines management expertise?
    - *Example of how expertise complemented other practice staff?*
    - *How would your expertise better utilised?*
16. Have you been able to improve the management of chronic conditions within the practices patient population?
17. Could you tell me about your journey to become a non-medical prescriber?
    - *When did you qualify as a NMP?*
    - *How long have you been prescribing for?*
    - *How have you been supported in this?*
    - *Consequences*
    - *Competency (Aware of RPS framework for prescribers).*
    - *Patient Safety*
18. Do you feel confident in the prescribing decisions that you make?
    - *Are you supported in the prescribing decisions?*
19. What are the advantages of having a prescribing Clinical Pharmacist in this role?
    - *Are there any disadvantages?*
20. Could you perform your role without a non-medical prescribing qualification?
21. Have you had the opportunity to influence repeat prescribing within the practice?
22. Is there anything you would like to see done differently that currently does not work so well?

Support Received / Given

23. How have you been supported within the practice?
    - *GP mentor*
    - *Support*
    - *What further support do you think you require*
24. Is there any additional training you feel you need?
25. For future Clinical Pharmacists taking on a patient facing roles can you make any recommendations for training necessary for the role?

Technician

26. Could you describe the role of the Clinical Pharmacist Technician within the Belper Five.
27. Would you consider the support of a Clinical Pharmacist technician essential for your role?

Intervention Coding

28. Could you explain to me the process for Read coding of the interventions you make?
- *How to determine correct codes?*
- *Challenges of coding*

29. How would you define an intervention?
30. Have you received any training for the Read coding of the interventions?
31. If you were to set up the coding of the interventions, how would you do it?

Follow-up

32. If you were to advise the CCG on the integration of Clinical Pharmacists into general practice what changes would you make?
33. Is there anything else you would like to add?

Annex M: Work Package 2: Interview Schedule GP Mentors

Involvement

1. What were the motives for the practice becoming involved in the scheme (having Clinical Pharmacists in patient facing role)?

The Patient Facing Role

2. What are the benefits of having a Clinical Pharmacist working within the practice?
   - *What are the benefits to a **patient** of seeing the Clinical Pharmacist?*
   - *What are the benefits to the **practice**?*
3. Have you been able to delegate any of your (or other GPs) workload to the Clinical Pharmacist?
   - *Medication reviews?*
   - *Discharge medication reviews?*
4. In your opinion, how is the Clinical Pharmacist's time in practice best spent?
   - *Is it valuable having a Clinical Pharmacist within the practice performing a medicines management role part of the time?*
   - *Does the split role work?*
5. Has the Clinical Pharmacist been able to improve the management of patients with multi-morbidity and chronic conditions?

Skill-set

6. What do you think are the most important skills for the Clinical Pharmacist working in practice?
   - *What clinical skills is important for the Clinical Pharmacist to have?*
   - *What is the best way to achieve this?*
7. Is it advantageous having a non-medical prescribing Clinical Pharmacist in this role?
   - *Are there any disadvantages?*
8. Does this role make best use of the Clinical Pharmacist's medicines management expertise?
   - *Example of how expertise complemented other practice staff?*
   - *How would your expertise better utilised?*
9. Has the Clinical Pharmacist been able to influence medication related policy within the Practice?
   - *Have you had the opportunity to influence repeat prescribing within the practice?*
   - *Examples*
10. Is there anything you would like to see done differently that currently does not work so well?

Integration

11. Which members of the practice team does the Clinical Pharmacist work most closely with?
    - *Has this changed?*
    - *How has this working relationship developed?*
12. Do you think that inter-disciplinary collaboration within practices improve patient's outcomes?
    - *In what ways?*
    - *Examples?*
13. What recommendations would you make for improving future patient facing Clinical Pharmacists integration into a Practice team?

Mentoring and support

14. How has the Clinical Pharmacist been supported within the practice?
    - *GP mentor*
    - *Support*
    - *What further support do you think they require*
15. How has the CCG supported the Clinical Pharmacist?
16. For future Clinical Pharmacists taking on a patient facing roles can you make any recommendations for training necessary for the role?

Follow-up

17. If you were to advise the CCG on the integration of Clinical Pharmacists into general practice what changes would you make?
18. Is there anything else you would like to add?

Annex N: Work Package 2: Memorandum of Understanding

NHS
Southern Derbyshire
Clinical Commissioning Group

Memorandum of Understanding
between
Southern Derbyshire Clinical Commissioning Group (SDCCG)
and GP Practices in Belper Sub-Locality

This Memorandum will take effect from 22nd January 2016

Parties:

The parties to this Memorandum are:

(1) GP Practices:
Appletree Medical Practice
The Arthur Medical Centre
Riversdale Practice
West Hallam Medical Centre
Whitemoor Medical Centre

(2) NHS Southern Derbyshire Clinical Commissioning Group (SDCCG)
Cardinal Square, First Floor, 10 Nottingham Road, Derby DE1 3QT

1 Introduction

The GP practices in the Belper practices sub-locality have identified the opportunity to redefine the model of care to respond to multiple challenges faced by health and social care services. These challenges include providing care for a growing frail elderly population with complex needs and increased patient expectations, delivering an increased demand for services within constrained finances and recruiting and retaining high quality staff.

The new mixed model of care has a particular focus on people with chronic physical and mental health conditions and the frail elderly to enable patients to self-care and remain as independent as possible, whilst retaining and enhancing core medicines management support.

Model of care:

1. The development of Clinical Pharmacists in patient-facing roles – a newly resourced provider role - supported by a medicines management technician. This part of the role is within the scope of this Memorandum of Understanding.

2. The core commissioned Medicines Management support will continue as historically resourced delivering commissioning functions relating to medications.

2. Definitions

The following terms are used throughout the document:

- Clinical Pharmacist : The Clinical Pharmacist is a new role who will provide expertise in medicines optimisation and medication review as an integral member of the practice team. They will be in a patient-facing role which will enable them to influence and optimise prescribing with the ability to manage long-term conditions independently. Through face-to-face reviews, which may involve home visiting, they will ensure patients are involved in prescribing decisions, their co-morbidities are optimally managed and will reduce wasteful and inappropriate prescribing. Their interventions will contribute to the reduction in medicines-related admissions and will increase access of patients to expert advice.
- Clinical Pharmacist Lead : The established clinical pharmacist employed within the sub-locality
- Clinical Pharmacist Team : The collective group of pharmacists employed to work in the above role, within the Belper sub-locality
- Clinical Pharmacy Team : The collective group of clinical pharmacists as above, and additionally the extra technician hours identified to support the clinical pharmacists
- Community Bids : Recurrent, ring-fenced monies awarded by SDCCG to groups of GP practices working collaboratively. The bids are awarded to encourage groups of practices to work together to improve the health of their collective population.
- MMT Lead Pharmacist (B5) : SDCCG Lead Pharmacist who will provide management support to the clinical pharmacy team within the GP practices in the Belper sub-locality, as identified in section 5.4
- Medicines Management Technician : SDCCG currently provide technician support to the five Belper practices, however the project proposal also includes extra technician support to assist the clinical pharmacist team in their day-to-day activities
- Project Proposal : original bid paper submitted to SDCCG to bid for transformational monies “community bid”

3 Scope

In addition to the roles identified in section 2 (definitions), the Clinical Pharmacy Team will aim to increase the number of post-hospital discharge medication reviews, reduce medicines waste, increase patient satisfaction levels relating to medicines use, reduce medicines related GP visits and help enable safe repeat prescribing policies, for the population of the Belper sub-locality

Extra Medicine Management Technician resource will support the Clinical Pharmacist as directed by them, for example identifying patients who are suitable for review.

The Clinical Pharmacy Team will develop, support, implement and monitor prescribing and medicines optimisation strategies at the individual GP practice level strongly linked to national and local priorities.

The Clinical Pharmacy Team will promote high quality, evidence based and cost-effective use of medicines within the practice.

Both roles may evolve as the Clinical Pharmacy Team becomes embedded within practices.

Whilst this MoU is between the Belper practices and SDCCG, day-to-day activities will be between the Medicines Management Team (MMT) and the practices.

The initial employing organisation for the Clinical Pharmacy Team will be Southern Derbyshire CCG; however in the future it is envisaged that employment moves to a suitable provider. In the instance of a proposed transfer, members of staff will TUPE across with existing terms and conditions.

4 Purpose

The purpose of this Memorandum of Understanding (MoU) is to set out the framework for the working relationship between Southern Derbyshire Clinical Commissioning Group (SDCCG) and the GP Practices in the Belper Sub-Locality (Belper practices), with regard to the roles and responsibilities; obligations, confidentiality and organisational interaction between each Belper GP practice and SDCCG, who is responsible for the supply and line-management of the staff which make up the Clinical Pharmacy Team within GP practices.

Each Belper GP practice and SDCCG agree to adhere to the contents of this MoU. It does not replace any of the organisations' statutory responsibilities, functions, agreements or policies relating to the activities of the providers or the GP practices.

5 Principles of Co-operation

The Clinical Pharmacy Team and the GP Practices in Belper Sub-Locality intend that their working relationship will be characterised by:

- Embedding a culture of shared working across the Belper Sub-Locality to best meet the needs of the population covered by the community bid.
- Ensuring that decisions are clinically sound and promote the safety of the individual receiving care via a clinical pharmacy approach.
- Respecting each partner's organisational independence.
- The need to maintain public confidence.
- Cooperating openly and transparently with the partner organisation to promote openness
- Using resources effectively and efficiently.

Whilst not within the scope of this document, the practices should define the principles of co-operation amongst themselves, to support the purpose of the collaborative bid.

The model of co-operation is illustrated in appendix 1.

6 Role & Responsibilities

6.1 The Clinical Pharmacy Team aims to provide direct patient contact to improve patients' use of medicines and management of Long Term Conditions. The service will support primary care and community staff to provide holistic care through the application of current local and national medicines management guidelines and improve the quality and cost-effectiveness of care provided.

Objectives

- Introduce a clinical pharmacy service.
- Integrate the role of the Clinical Pharmacist as part of the Belper locality practice team(s).
- Develop the role of the technician to support the clinical pharmacists' objectives.
- Develop pharmacist-led clinics within the practice, offering face-to-face reviews with patients, enhancing patients' understanding of medications, their use and optimally managing patients' prescriptions reducing inappropriate and wasteful prescribing
- Reduce the number of hospital admissions and readmissions by supporting patients and identifying and addressing medicines related issues.
- Establish and monitor a repeat prescribing system to ensure a high level of efficiency and governance.
- Become the practice resource for medicine-related queries.

6.2 The Clinical Pharmacist Lead agrees to:

- Act as a clinical mentor to the Clinical Pharmacist and technician and support their development.
- Support the induction of the individuals and facilitate integration into their practice.
- Liaise with the practice team to ensure that all staff understand the role of the Clinical Pharmacy Team and ensure suitable patients are referred to them.
- Work with individuals to develop a Competency Assurance Framework.
- Liaise with the MMT Lead Pharmacist (Belper 5) to discuss progress and performance of individual clinical pharmacists to assist the appraisal and 1:1 of the individuals.

6.3 The GP Practices in the Belper sub-locality agree to:

- Facilitate access to practice systems at agreed times with appropriate access rights.
- Identify GP leads to support pharmacists via clinical debriefs, responding to the needs of the pharmacist and to provide general support/monitoring.
- Liaise with the Clinical Pharmacist Lead and MMT Lead Pharmacist (Belper 5) to discuss the progress and performance of individual clinical pharmacists to assist the appraisal and 1:1 of the individuals.
- Identify a GP lead(s) to act as a clinical mentor if/when the individual undertakes prescribing training.

- Identify a GP lead(s) to act as a clinical mentor if/when the individual has a prescribing qualification but needs to complete a refresher course to regain competency.
- Provide suitable consulting facilities to enable the pharmacist to undertake the role.
- Co-ordinate training for consultation skills.
- Provide suitable facilities for the pharmacy technician to support the pharmacist role.
- To facilitate clinic time and manage the appointment system on behalf of the role(s).
- Support and facilitate the clinical pharmacy team to become integrated members of the practice team(s).
- Support the induction of the clinical pharmacy team.
- Ensure the clinical pharmacy team abide by practice policies where appropriate (e.g. business continuity).
- Highlight any areas of clinical concern to the Clinical Pharmacist Lead and MMT Lead Pharmacist (B5).
- Act as data controller in accordance of the Data Protection Act.
- Ensure that the clinical pharmacy team observe the practice(s) Health and Safety policies and procedures and maintains a safe method of working.
- Ensure that prescribing pharmacists are appropriately registered with the NHS Business Service Authority.
- Until a CCG policy is agreed, ensure the member of the clinical pharmacy team works within the framework of the practices' Lone Working/Home Visit policy.
- Allow the clinical pharmacy team to attend:
    - Medicines Management Team meeting
    - Team training as appropriate;
    - Locality Team Meeting,
    - SDCCG staff time outs,
- Allow the clinical pharmacy staff time to complete mandatory CCG training. The program may alter from year to year. A log of the essential training will be maintained at Cardinal Square and will be available on request.

The GP practices will ensure that IT access is available to the Clinical Pharmacy Team at the agreed times. The Commissioned IM&T Enablement Team will provide support to GP sites and Clinical Pharmacists with issues relating to clinical system support, training, data collection and reporting.

Whilst the Medicines Management Team Lead Pharmacist (Belper 5) undertakes formal line management responsibility for the Clinical Pharmacy Team, practices will have day-to-day contact with the Clinical Pharmacy Team and will have a management role in operational matters.

6.4 SDCCG via MMT Lead Pharmacist (Belper 5) agree to:

- Recruit clinical pharmacy team staff and undertake any employment checks.
- Provide an induction programme.
- Liaise with GP practices and the Clinical Pharmacist lead to facilitate line management responsibilities.
- Provide line management to the individual and undertake:
    - Usual line management functions, which includes sickness absence, annual leave, disciplinary or performance issues
    - Regular (monthly) 1:1s
    - 6 and 12 monthly appraisals
    - Development review
- Provide clear managerial contact links for the practice.
- Ensure that clinical pharmacy team are aware of information sharing agreements.
- Ensure clinical pharmacy team are aware of CCG policies (e.g. gifts and hospitality).
- Work with practices on an individual basis to resolve any issues, and to ensure good working relationships are maintained.
- Monitor KPIs and work with practices to evaluate the project and provide updates and reports as required.
- Support a collaborative working approach.
- Maintain a Competency Assurance Framework for all clinical pharmacist(s) providing the service.
- Ensure that the member of the clinical pharmacy team is issued an NHS smart card with relevant access.
- Process and pay relevant expenses as set out in section 10 (Terms and fees) below.
- Check the registration status (including prescribing status) of the Clinical Pharmacy Team on an annual basis.
- Prioritise workload and liaise with the Clinical Pharmacy Lead if workload exceeds the allocated time available..

7 Accountability arrangements

Accountability for performance of the services and functions set out in the MoU lies with:

Day to day contact

Belper Practices: **Clinical Pharmacist Lead (clinical matters)**

Practice Manager (operational matters)

MMT: **MMT Lead Pharmacist (Belper 5)**

Organisational accountability

Belper practices	**MMT**
Appletree Medical Practice Ruth Hewitt 01332 842288	SDCCG: Jo Stanney Head of Medicines Management Steve Hulme Director of Medicines Management 01332 868708
The Arthur Medical Centre Andrew McKenzie 01332 880249	
Riversdale Practice Andrew Morange 01773 822386	
West Hallam Medical Centre James Burns 0115 8408458	
Whitemoor Medical Centre Nick Bishop 01773 881140	

8 Duration and Review

This MoU will take effect from 22nd January 2016.

This MoU will be periodically reviewed as required. Both the Belper GP practices and Clinical Pharmacy Lead will liaise with the MMT Lead Pharmacist (Belper 5) and will:

- Report on any actions arising from the operation of the MoU.
- Review the effectiveness of this MoU in achieving its aim, and make mutual agreed amendments between the CCG and Belper practices where necessary.
- Provide feedback on their experiences, benefits realised, areas for improvement or other constructive insights.

- Identify areas for future development of the working arrangements.
- Ensure the contact information for each organisation is accurate and up-to-date.

If not terminated as per clause 16, the MoU will automatically renew on the anniversary of the effective date.

If the agreement is terminated the MMT will endeavour to redeploy clinical staff within existing MMT roles; staff however taking the alternative of redundancy will have costs met from the project budget as outlined in section 10 (terms and fees).

If employment transfers to a suitable provider, staff will transfer via TUPE with existing terms and conditions.

9 Monitoring

To monitor the performance of the clinical pharmacy team model SDCCG will work in a collaborative approach with the Belper GP practices.

Both parties shall agree a work plan with agreed outcomes, targets and indicators. The work plan will be agreed at the beginning of each financial year. Any in-year revisions shall be mutually agreed between both parties.

The original objectives from the project proposal were:

• Improved access to care for patients • Improved patient care and patient experience	
Clinical Effectiveness	• Appropriate skill-mix to ensure effective monitoring and management of patients medication • Support patient concordance • Additional support to introduce latest NICE guidance
Patient Experience	• Focused time for patients to discuss medication issues and have medication adjusted/prescribed
Staffing	• Appropriate use of available resources • Release GP time • Release Practice Nurse time
Increase in activity	• Additional hours within primary/community services to support frail & elderly population to remain closer to home

KPIs:

1) Increased capacity in the Belper sub-locality
2) Increase in number of discharge medication reviews
3) Increase in patient satisfaction level
4) Reduction in number of GP visits

Expected service outcomes from an enhanced clinical pharmacy team are contained within appendix 2:

The first year's KPIs will be reviewed once the clinical pharmacy team are in place.

10 Terms and fees

Funding for the Clinical Pharmacy Team has been established as recurrent, ring-fenced funding by the CCG (The "Community bid"). The costs for the clinical pharmacy team element for FY '16/'17 is contained within Appendix 3. SDCCG will monitor spend on clinical pharmacist, technicians and MMT Lead Pharmacist (Belper 5) and will inform the GP practices in the Belper sub-locality of current spend against that budget upon request.

The MMT undertake to recruit clinical pharmacists (Agenda for Change band 8a) as identified by the project proposal (2.84 WTE), technicians (band 5 - 0.4 WTE) and management support (band 8b - 0.2 WTE).

The Clinical Pharmacy Team will be entitled to annual leave in accordance with their employment agreement. Annual leave will be need to be authorised by both the GP practices and MMT Lead Pharmacist (Belper 5). Practices should ensure sufficient cover across the sub-locality particularly at times of popular annual leave requests (eg school holidays)

SDCCG shall not be obliged to make available to the practice(s) the service of the employee (or any replacement employee) during any period of incapacity on the part of the employee due to illness, injury, maternity leave or as otherwise permitted under the employment agreement. In such circumstances, if requested by a practice(s) and in the event SDCCG can provide the services of a replacement employee, funding for such fees or charges will be from the community bid funding in accordance with this MoU in addition to any fees or charges in respect of the incapacitated employee.

Employees would receive sickness pay as per their contract. This is detailed in Appendix 1 in the "Your Attendance Matters" policy (URL: https://sdccgintranet.files.wordpress.com/2013/11/your-attendance-matters-sickness-and-absence-policy2.pdf).

SDCCG will reimburse the employee (on production of such evidence as it shall reasonably require) the amount of all expenses properly and reasonably incurred in the course of performing the duties assigned to them. Such expenses will be charged to the community bid funding.

11 Risk Management & Incident Reporting

Both parties will work together to manage the risks relating to this MoU and have in place appropriate systems for risk identification, eradication or mitigation. Should an incident arise staff will bring it to the attention of both parties using agreed reporting procedures. SDCCG will use their best endeavours to provide the service outlined in this MoU.

Clinical Pharmacists or Technicians responsible for any incident shall report the incident under the National Reporting and Learning System (NRLS) and allow SDCCG oversight of the incident.

In the circumstances of voluntary redundancy being offered by SDCCG, written agreement must be obtained from the Belper 5 practice(s) to offer voluntary redundancy to any staff working as part of the Clinical Pharmacy Team. SDCCG will be responsible for any financial risk arising from this situation

In the circumstances where the Belper practice(s) request a reduction in staff/provision and SDCCG cannot redeploy staff then the financial risk arising from redundancy, will be held by the community bid funds. SDCCG will not be liable for any further costs outside of this budget.

In the circumstances of Clinical Pharmacists or technicians not wishing to move over to alternative employment, the CCG will need to either offer redundancy terms to members of staff not wishing to transfer, or offer alternative employment within the CCG at the same grade (which may or may not be within the medicines management team). Redundancy costs will be held by the community bid funds.

12 Liability

To facilitate safe working practices, each employee acting as a Clinical Pharmacist will work within a Competency Assurance Framework which will be developed by the Lead Pharmacists and agreed by SDCCG. This framework will provide the scope for practice, will consider the technician role and will need to be signed off by the Clinical Pharmacist Lead and practice(s) the employee will work in.

Clinical Pharmacists will need to undertake an annual declaration of continued competence to SDCCG and the GP practices.

Clinical Pharmacists are legally accountable for their prescribing decisions, including actions and omissions, and cannot delegate this accountability to another person. Clinical Pharmacists must only prescribe within their experience and sphere of competence.

Clinical Pharmacists and Technicians are accountable to maintain their Continual Professional Development.

As employer, SDCCG will be vicariously liable for negligence or omissions on the part of its employee under the course of their duty; as SDCCG is a contributing member they will also be covered for personal liability under the NHSLA CNST (NHS Litigation Authority Clinical Negligence Scheme for Trusts).

13 Confidentiality and Data Storage

This MoU shall be deemed confidential to both parties and their respective employees. No details held within this MoU will be divulged to any third party without the prior consent of the signatories to this agreement or their nominated representative.

For the purpose of this agreement the practices will be the data controllers and the seconded staff must adhere to the data controller's internal policies and procedures regarding Information Governance and Information Security and must not act without the express permission of the data controller.

Data storage and processing by the Data Controller for the purposes of this MoU shall be in compliance with the relevant provisions of the Data Protection Act 1998.

Resources produced by either party may be deemed commercially and/or intellectually sensitive and shall not be adapted or adopted for purposes outside this agreement without express permission of either party.

To enable the employee to provide the Clinical Pharmacy service it is acknowledged that the practice(s) will provide the employee with information of a highly confidential nature which is or may be private, confidential or commercially sensitive secret, being information or material which is the property of the practice(s) or which the practice(s) are obliged to hold confidential include, without limitation, all trade secrets, lists or details of patients, information relating to the working of any process or invention carried on or used by the practice(s) or any subsidiary or associate, research projects, and any proprietary practice information (any and all of the foregoing being "Confidential Information")

14 Communication and liaison

In keeping with the character of developing effective joint working, the GP Practice and the Clinical Pharmacy Team will discuss matters openly and regularly as necessary. The Clinical Pharmacy Team will have an established point of contact (see day to day contacts) to escalate concerns. The Clinical Pharmacy Team will also establish a forum by which learnings and experiences can be shared. Both parties will assist in providing information for investigations if required.

15 Resolving Issues

The effectiveness of the working relationship between the Belper GP practices and Clinical Pharmacy Team will be ensured through regular contact, both formally and informally of the respective organisations.

Any disagreement between the Belper GP practices and Clinical Pharmacy Team will normally be resolved at working level. If this is not possible, it will be brought to the attention of the MoU day-to-day key contacts in section 6.

If this cannot be resolved, it may be referred to the senior partners within the GP practices within the Belper sub-locality and Head of Medicines Management who will then jointly be responsible for ensuring a mutually satisfactory resolution.

16 Termination

This agreement may be terminated by either party giving the other 12 months' notice. A notice of less than 12 months will require mutual agreement between the parties.

17 Signatories to this MOU

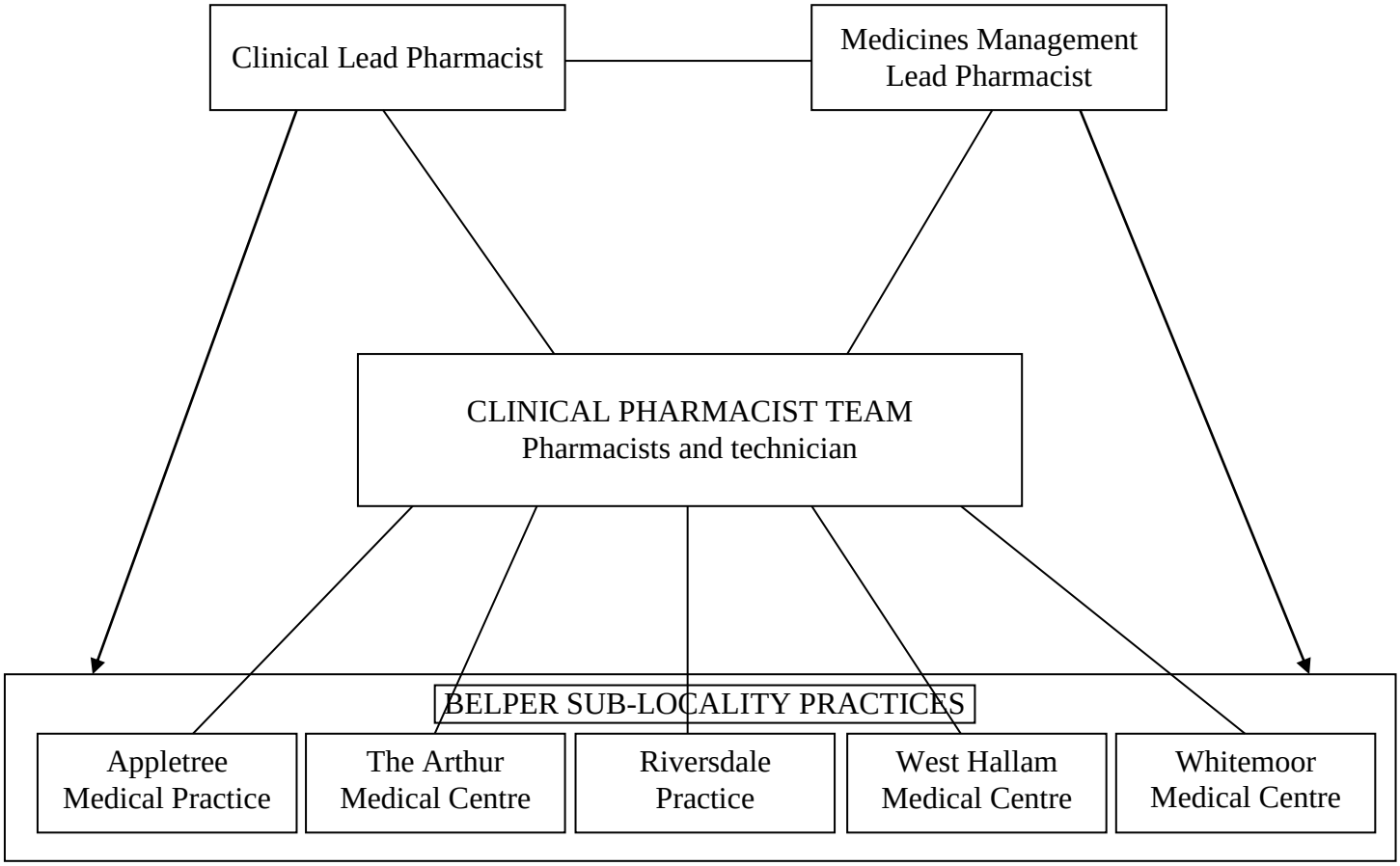
Name	Organisation	Title	Signature	Date
GARY THOMPSON	SDCCG	CHIEF OFFICER		
DR RUTH HEWITT	APPLETREE MEDICAL CENTRE	SENIOR PARTNER		
DR ANDREW McKENZIE	ARTHUR MEDICAL CENTRE	SENIOR PARTNER		
DR DOMINIC HEWITT	RIVERSDALE PRACTICE	SENIOR PARTNER		
DR JAMES BURNS	WEST HALLAM MEDICAL CENTRE	SENIOR PARTNER		
DR PADDY KINSELLA	WHITEMOOR MEDICAL CENTRE	SENIOR PARTNER		

VERSION CONTROL

VERSION NUMBER	DATE	Comments
1.0	16.10.2015	First draft
2.0	26.10.2015	Updated with comments from Stuart Fletcher (Governance Manager, SDCCG)
3.0	27.10.2015	Comment re: investigating litigation
4.0	17.11.2015	Amended to more closely link outcomes to objectives
5.0	17.11.2015	Minor Changes
6.0	14.12.2015	Amended following comments from Directors' meeting. Added exit strategy KPIs redesigned to be more measurable
7.0	23.12.2015	Minor amends following comments from Dr Andy Mott
8.0	4.1.2016	Reviewed following discussion between Garry Barrett, Steve Hulme, Jo Stanney and Yinka Soetan Added definition section Added model of co-operation Tidied roles and responsibilities of parties Amended organisational accountability to senior partner Removed KPIs following directors' feedback; added to appendix Financials added as an appendix
9.0	6.1.2016	Added section to assure commissioned medicines management resource will continue to be provided More detail to appendix 3 (financials) Signatories to MoU need to be senior partner (can be delegated via email)
10.0	18.1.2016	Final version agreed by SDCCG senior management team and Belper 5 board

APPENDIX 1 – CLINICAL PHARMACY TEAM PRINCIPLES OF CO-OPERATION

The diagram shows the proposed collaborative structure the clinical pharmacy team will work in. The clinical pharmacy team will be at the centre of the model, supported by the Lead Pharmacists and practices, and will work to help improve health outcomes for the Belper Sub-locality population.



APPENDIX 2 – MEASURES/KPIS FOR THE CLINICAL PHARMACY TEAM

- Successful integration of the clinical pharmacy team, with each practice having a prescribing pharmacist running clinical sessions within the first year and demonstration of collaborative working with other members of the primary and community workforce.
- Improved patient access in the Belper sub-locality, through regular consultations/clinics/home visits with clinical pharmacists, measured through an increase in number of consultations with a healthcare professional.
- Optimisation of medications via a holistic approach for patients with long term conditions and polypharmacy resulting in a reduction of inappropriate and wasted medications and harm caused by medications (e.g. falls). This can be measured through the use of read-codes for medication review and de-prescribing.
- Increased engagement of patients with long-term conditions, measured by better self-care and an increase from baseline of patients with self-management plans
- Establishment and monitoring of a safe and effective repeat prescribing system to ensure a high level of efficiency and governance. Increased uptake of repeat dispensing from baseline.
- Increase in the number of discharge medication reviews from baseline
- Increase in patient satisfaction levels with Primary Care as reported in the patient survey. Separate evaluation of patient confidence in the pharmacist role to be evaluated (eg Survey Monkey)
- Reduction in number of GP visits, allowing more time and access for patients to GPs in practice clinics.
- Improve the working relationship with community pharmacies, becoming the experts in dealing with stock queries and encourage pro-active prescribing to reduce the number of queries coming into practice.
- Create a culture of reporting and learning from incidents, measured through increased reporting through the NRLS (National Reporting and Learning System)
- Encouraging a culture of shared learning and working; both within the clinical pharmacy team and GP practices; measured by attendance at joint meetings and educational events
- Increased compliance with the Joint Formulary

APPENDIX 3 – FINANCIAL INFORMATION FOR THE CLINICAL PHARMACIST TEAM (FY 2016/17)

1. Provider function

		Top end salary	On costs	Expenses (mileage, equipment, etc.)	No. staff - FTE	£ Cost		
			24%	10%				
Band 8a Clinical Pharmacist		47,559	58,973	64,870	2.84	184,232		
Band 5 Technician		28,180	34,943	38,438	0.4	15,375		
Clinical Pharmacist								
Lead year 1	22600	12-->10 hrs/week			0.28	22,600		
year 2	13200	6 hours/week			0.16			
MMT Lead Pharmacist Costs (0.2 band 8b)		57069	70,766		0.2	14,153		
Total - first 12 months					3.24		236,360	236,360

2. Commissioning function

Medicines Management support will continue to be provided (current levels 46 hours pharmacist time and 22.5 hours technician time). In times of Medicines Management Team staff shortage (absence, vacancies etc), part of the commissioning function may need to be temporarily redeployed across the wider locality/CCG