

Self-administration of medications in inpatient postnatal women: an opportunity to empower self-care, improved medicines knowledge and adherence utilising clinical pharmacists and midwifery workforce and use of a midwife formulary

Sherry Ann Wright,¹ Claire Higgins,² Jenny Carson,¹ Moira Kinnear,³ Pauline Smith,⁴ Nirmala Mary,⁵ Emma Westall,⁶ Sadaf Arshad¹

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For numbered affiliations see end of article.

Correspondence to

Sherry Ann Wright, Lead Pharmacist, Women's Services, Royal Infirmary of Edinburgh, NHS Lothian University Hospitals Division, Edinburgh EH1 3EG, UK; sheryann71@hotmail.com

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ABSTRACT

Objectives To assess the impact of self-administration of medicines (facilitated by a midwife formulary) on postnatal women's knowledge of certain post-delivery medications, awareness of the Green Bag Scheme, factors contributing to constipation, pain satisfaction, adherence, and time released to midwives plus feedback from these women and their midwives.

Methods The study was conducted in consented postnatal women, who self-administered medications from their bedside lockers. The mode of delivery and parity were recorded. Data were compared in women who self-administered to those who did not. Midwives used our established midwife formulary to write their essential unprescribed medications. Direct interview questionnaires were used to obtain their knowledge on chosen post-delivery medicines, pain satisfaction, the Green Bag Scheme and factors contributing to constipation. Regular medicines counts were used to check adherence. Midwives' time not administering these self-administered medications was estimated. Self-reported questionnaires were used to obtain feedback from participants and midwives. Responses were analysed proportionately and where appropriate by simple statistics.

Results Women (n=203) who self-administered were compared with those (n=401) who did not. Greater medicines' knowledge and better (96% vs 79%) pain satisfaction were found in self-administering women. Knowledge of each contributing factor to constipation varied. Mode of delivery and parity had no impact on these outcomes. Adherence seemed high 96% (195/203). Awareness of the Green Bag Scheme was poor (66/604). Most women, 94% (191/203) found the service helpful and 89% (178/200) would take part again. At least 224 hours were released to midwives by these self-administering women. 164/203 (81%) midwives felt the scheme was beneficial.

Conclusions Self-administering women had better pain satisfaction, medication knowledge and adherence. The need to improve engagement in the Green Bag Scheme was flagged. This service, supported by use of a midwife formulary, can release time to midwives to do other tasks including care for women with more complex issues. A business case for this service is under review.

INTRODUCTION

Self-administration of medicines (SAM) has been promoted as an important inpatient hospital service as it can improve compliance and empower self-care.^{1,2} Most SAM services have been offered in the care of the elderly^{3,4} and to a limited extent in maternity services.^{5–7} Medication usage during and after pregnancy and while breastfeeding is widespread.⁸ Information on safety and efficacy of medications may reduce misperceptions and poor adherence.⁹ Common postnatal care issues are pain¹⁰ and constipation.¹¹ Constipation can contribute to pain so active management and awareness of causative factors could be beneficial. SAM service presents a face-to-face opportunity to educate these women about their medications and management of these common care issues. Better understanding about medicines may improve adherence and reduce medication errors.^{12–15} In mental health services non-adherence resulted in wastage of about £150 million (€175 million) per annum and 55–60% hospital readmission.¹⁶ Non-adherence of medication is common in pregnant women, but its implications are unknown.

Midwives (MWs) can legally write midwife exemptions and other medicines within their sphere of practice and competency.¹⁷ Single doses can be written and administered only by the same midwife. A key role of clinical pharmacists (CPs) is to provide pharmaceutical care to ensure safe and effective use of medicines within the multidisciplinary workforce. With a small CP team, we needed to explore options to support MWs to embrace these activities. CPs collaborated with senior MWs and obstetricians and developed the Lothian Midwife Formulary (LMF) (online supplemental information A-1/2) and education and assessment packages to enable MWs to initially write single doses of agreed medicines. MWs were aware of women who would be suitable for SAM, especially those who were likely to need longer inpatient stays related to babies or other care issues. Legally MWs can write medications for inpatient women under their care, who are suitable and consented to SAM and at discharge. SAM can speed up the discharge process.^{5–7} To optimise benefits of LMF, it was agreed to introduce a maternity SAM service. Locally approved support packages were developed to educate, assess, and

Table 1 Women's knowledge of the Green Bag scheme and those who brought in their own medicines

Medicines issues	Non-SAM (n=401)	SAM (n=203)	P value
Women who knew about the Green Bag Scheme	8%	18%	p<0.005
Women who brought in their own medicines	52%	64%	p<0.005

SAM, self-administration of medicines.

engage MWs in the SAM service. If certain medications had not been prescribed by doctors, MWs could write required medications using the LMF for SAM women and speed up the process, avoiding the need to contact a doctor to do this task.

One Stop Dispensing Service (OSDS)¹⁸ is essential to implement a SAM service as patients' bedside lockers containing all labelled medications, not the drug trolley, are used for medicine administration. Our maternity unit has an OSDS. At antenatal clinics, women should be encouraged to bring in their own medications at admissions, part of the Green Bag Scheme,¹⁹ as it improves access to medications, patient care and flow and reduces medicine wastage with potential financial benefits. OSDS can facilitate prompt set up of SAM as it avoids the need to order chronic medications from the pharmacy with potential for delays.

CPs and senior MWs collaborated to support and evaluate benefits of the SAM service, also supported by the introduction of the use of LMF by MWs in postnatal women. The outcomes assessed were women's pain satisfaction and knowledge of chosen post-delivery medications, factors contributing to constipation, awareness of the Green Bag Scheme, the need to bring in their own medications at admissions, and medicines adherence. Potential time released to MWs by SAM women and feedback from SAM women and their MWs were obtained. The vision was that SAM can potentially deliver a more patient-centred care²⁰ and make better use of the workforce.

METHODS

Evaluation of the benefits of implementing a SAM scheme was undertaken in postnatal women on two postnatal wards at the Royal Infirmary of Edinburgh, a regional maternity service offered to a population of over 800 000 which manages about 9600 deliveries per annum. Data were collected from May 2016 to January 2017.

Exclusion criteria for participation in SAM were history of alcohol or drug misuse, <18 years old, unwell, confused, not fluent in English, and non-consenters. Direct interview questionnaires were completed for consented SAM and non-SAM women. SAM was initiated in those capable of level 3 SAM,¹ that is, they could independently self-administer medications and record the word 'self' and their initials for each dose taken on their medicine chart. Only labelled medicinal products with

directions were stored in bedside lockers. They had to agree to keep the locker key safe and return it to their MWs at discharge. MWs were available for support if required. Women were informed that regular counts of their medications and a record of intakes on a medicine chart would be done. The option to stop SAM anytime if felt appropriate was shared.

Quantitative and qualitative methodologies^{1 2 21} were used to develop a local structured direct interview questionnaire using mainly closed-ended yes/no questions. The direct interview questionnaire technique was chosen as it provided the opportunity for direct patient interaction to clarify questions and reduce misunderstanding. Before its use, questionnaires were piloted among the CP team and amended accordingly.

Unique keys for lockers were issued to consented SAM women. Master keys, that could open all lockers, were used by MWs. A paper log was created to record all keys provided to SAM women. SAM information packages were created and shared. These contained a consent form, criteria for level 3 SAM assessment, medicines adherence log, and SAM women's and MWs' feedback forms. Laminated sheets were provided to SAM women at initial set-up. It contained essential information on the SAM process and how to record each dose taken on medicine charts.

A simplified booklet was created to support and engage MWs in the SAM service. Education sessions on the SAM scheme were delivered by CPs to MWs before this evaluation and support was provided on how to write required medications using the LMF, where appropriate. During the initial stage of implementation, SAM set up, monitoring and data collection were done by the CP team. SAM set ups were done by MWs using the LMF in the latter stages. Before consent for SAM, a pharmaceutical care review was done by CPs on all women's medical, clinical results, medicine reconciliation²² and allergy histories. Prompt management of pain was encouraged. Information about onset and duration of action of prescribed analgesics were shared with women to enable a better understanding of pain management.

Recorded patients' demographics were mode of delivery and parity, as after complex deliveries such as caesarean section and/or after first birth (primiparous) women may be more unwell or cautious and less likely to take part in SAM. The impact of these factors was considered useful to direct implementation of the SAM service. As women were usually knowledgeable about their chronic medications, the evaluation assessed knowledge on chosen post-delivery medicines, namely paracetamol, ibuprofen, dihydrocodeine and ferrous sulfate/fumarate. Medication knowledge (name, dosage, a common adverse drug effect), pain satisfaction, factors contributing to constipation, medicine adherence, awareness of the Green Bag Scheme, and the requirement to bring their own medications at admission were assessed.

All medications were checked before SAM set up by the CP team or MWs to ensure these were appropriately labelled and suitable for re-use before a tablet count was done and logged.

Table 2 Women's knowledge on post-delivery medicines (SAM (n=203) and non-SAM (n=401))

Name	Know name of medicine	Know dose	Know a common ADR
	SAM vs non-SAM, p value	SAM vs non-SAM, p value	SAM vs non-SAM, p value
Paracetamol	100% to 95%, p<0.005	89% to 47%, p<0.005	61% to 19%, p<0.005
Ibuprofen	98% to 92%, p<0.005	84% to 37%, p<0.005	63% to 22%, p<0.005
Dihydrocodeine	91% to 60%, p<0.005	66% to 17%, p<0.005	63% to 19%, p<0.005
Ferrous sulfate/fumarate	97% to 78%, p<0.005	70% to 32%, p<0.005	65% to 29%, p<0.005

ADR, adverse drug reaction; SAM, self-administration of medicines.

MWs were advised to contact the CP team for any unmet medicines-related issues. All prescribed medicines (name, form, strength), date and initial quantity were recorded. Subsequent tablet counts by the CP team or MWs every 1–2 days and at discharge were also recorded on the medicine adherence log and stored in the bedside locker. Adherence was based on the tablet counts that matched signed dosages by SAM women on their medicine chart. Non-adherence/compliance (including overuse of opiates or opioids) was discussed with doctors or their MWs.

For non-SAM women, those who opted not to self-administer but consented to questionnaires, direct questionnaires were done immediately after consent. It was not pragmatic to specify a fixed time for SAM women to do direct interview questionnaires for various reasons such as being asleep, have family/friends visiting or out-of-ward visiting baby on the neonatal unit, so it was done at one of the tablets counts 1–2 days later. The question 'Did you find SAM useful?' for SAM women and their MWs was on the direct questionnaire completed by the CP team. All quantitative responses were logged on a Microsoft Excel document. Data were analysed quantitatively based on counts of responses of open and closed-ended questions.²³ Open and closed-ended questions with free text feedback questionnaires were left in SAM women's bedside lockers with agreement that these were to be self-reported by them and their MWs at a suitable time during their inpatient stay. Responses were recorded manually on a Microsoft Excel document. Compliance with data protection was adhered to by anonymising all patients' specific data before analysis. Quality of pain control was based on local maternity practice; codes 1–5 were used, where very unsatisfied=1 and very satisfied=5. Baseline knowledge data (n=203) were obtained on factors contributing to constipation¹¹ (fibre, fluid, mobility, and medications). As constipation can contribute to pain, all constipated women were prescribed laxatives.

The average time taken to complete the SAM setup by the CP team across a small sample (n=20) was used to estimate MWs' SAM set up time. Only time directly related to SAM set up and evaluation was recorded. MWs (n=20) were shadowed while using bedside lockers to administer oral dosages to determine the average time taken to administer each oral medicine. The total number of doses taken by SAM women was multiplied by time taken by MWs to administer and record each dose to estimate time released to MWs.

Statistical analysis

The Z test was used to estimate p values to confirm statistical difference where appropriate.²⁴ Categorical/binary data were analysed using a mean value and standard deviation (if distribution was normal). A value of $p < 0.05$ was considered to be statistically significant.

RESULTS

SAM and non-SAM women's awareness of the Green Bag Scheme, knowledge of chosen post-delivery medicines, pain satisfaction, factors contributing to constipation, and medication adherence

Of 604 postnatal women reviewed, 203 took part in SAM and 401 did not self-administer (non-SAM). Mode of delivery was 37% by caesarean section and 63% by uncomplicated deliveries; 57% were primiparous and 43% parous in SAM women. Awareness of the Green Bag Scheme was poor (68/604) for all women; however, more SAM women brought in chronic medications

Table 3 Women's pain satisfaction for SAM versus non-SAM

Pain satisfaction level	SAM (n=203)	Non-SAM (n=401)	P value
Very satisfied/satisfied	96%	79%	$p < 0.005$
SAM, self-administration of medicines.			

(table 1). About 35% (140/401) of non-SAM women compared with 45% (92/203) of SAM women were on chronic medicines for pre-pregnancy conditions.

Most (183/203, 90%) of the initial SAM set ups were done by the CP team, and the remaining 10% (n=20) were done by MWs. MWs used the LMF to write appropriate medications before SAM set up in 15 women. Better medication knowledge (table 2) and pain satisfaction (table 3) were reported by SAM women. Awareness of factors contributing to constipation was mixed (table 4). Self-reported feedbacks from SAM women and MWs were generally positive. Some questionnaires were incomplete. The main reason was that they forgot to complete them. These issues could not be addressed as data were analysed at the end of the evaluation. Most (72/92) SAM women on chronic medications said they would bring these at future admissions (table 5 and online supplemental information B). The mode of delivery or parity had no impact on women's knowledge of the Green Bag Scheme, chosen post-delivery medications or factors contributing to constipation and pain satisfaction. Medicines adherence was high (96%- 195/203) in SAM women.

Estimate time released by SAM postnatal women to MWs

SAM women (n=203) took an average of 22 doses using a mean of four medicines (range 3–8) over a mean duration of stay of 51.5 hours (range 18–263 hours). Each oral dose given by MWs using the women's bedside locker took 3 min. If the bedside locker was not used or MWs were distracted or had to administer subcutaneous dalteparin, then the time taken was longer. The minimum time released to MWs by 203 SAM women, who took 4474 doses, was 224 hours. Many women who had their babies on the neonatal unit, or those who desired more private time, found SAM gave them flexibility. Questionnaires confirmed that some found SAM very educational and helpful. The time taken by the CP team to obtain consent, log medicines, explain the process and provide necessary medicines-related information was about 20 min, but was longer depending on complexity and communication issues. No pharmacy input was required for SAM women (n=20) set up by MWs and hence time was released to the CP team to do other tasks.

DISCUSSION/CONCLUSION

This evaluation found that postnatal SAM women had better pain satisfaction and medication knowledge in line with previous studies.^{5–7} SAM enabled these young and healthy childbearing-age women to be more informed about medicines and be responsive to their needs within a supported inpatient environment with

Table 4 SAM women's knowledge on causative constipation factors (n=203)

Factors contributing to constipation	
Fibre	72%
Fluid intake	65%
Mobility	30%
Medications	64%
SAM, self-administration of medicines.	

Table 5 Postnatal SAM women's and their MWs' feedback

Questions	Yes
Feedback 1—SAM women (n=203)	
Did you find SAM helpful? (n=203)	94%
More knowledgeable about medicines? (n=150)	91%
More in control of symptoms? (n=145)	95%
More flexible? (n=143)	93%
Do not have to buzz midwife and wait for medicines? (n=142)	90%
Pain control very satisfied/satisfied? (n=201)	96%
Will you bring in own medicines in future? (n=92)	78%
Would you participate in SAM again? (n=200)	89%
Feedback 2—MWs who cared for SAM women (n=203)	
Did your patient find SAM beneficial? (n=203)	81%
Released MW's time to care for more complex patients? (n=149)	92%
Patient more knowledgeable about medicines? (n=148)	89%
Did MW encounter problem with SAM? (n=180)	11%
What will make SAM sustainable?	
Continued support from pharmacy to assess patients (n=128)	100%
Continued support from pharmacy to monitor patients (n=128)	94%
MWs, midwives; SAM, self-administration of medicines.	

regular checks of adherence. Improved knowledge about medications has been shown to improve adherence, patient satisfaction and outcomes.^{12–25} Previous studies have shown benefits are greater and more sustainable with input from a multidisciplinary team including CPs.^{25–26} This study also confirms that SAM should be offered at every postnatal unit^{5–7} as it enables women to engage in their care issues.

In this evaluation, more women on chronic medications took part in SAM.⁶ Despite poor awareness of the Green Bag Scheme, more SAM than non-SAM women (64% vs 52%) brought in chronic medicines at admission, and 78% of SAM women agreed that they would do so at future admissions. Adherence was about 96% in SAM women. Further study is required to confirm whether this adherence continues after discharge. Effective communication is essential to share information and build trust. It is important to modify information to the patient's needs. When non-adherence (4%) was found, this approach was useful to detect the possible cause and address issues without blame. Motivational interviewing technique training would be appropriate before adoption of the SAM scheme.²⁷

Introduction of the SAM scheme is a change of practice for MWs as it shifts the emphasis from scheduled medicines administration to the education of patients about medications, which may be more time consuming. About 92% of MWs agreed that SAM has the advantage of releasing time to them to care for women with more complex issues. MWs have engaged in the SAM set-up and used the LMF to write unprescribed medications for SAM women, thereby releasing time to doctors to manage more complex women. MW-led SAM service may also release time to CPs to deal with other tasks, including women with more complex pharmaceutical care issues. This project has confirmed many benefits of SAM in postnatal women, such as improving the quality of care and potentially making better use of the workforce with multidisciplinary collaboration.

Study strengths and limitations

The strength of this study was that evaluation of this service redesign required engagement of key stakeholders, production of educational packages and training that met service governance and quality standards. Direct interview questionnaires helped to

clarify ambiguities and offered a more patient-focused response, but was time consuming, especially for women who had several enquiries. Questionnaires were designed locally so generalisability is unknown. A limitation was that the women were self-selective and may therefore not be representative of those who opted out, or the women were from other regions so future collaboration would be helpful. Factors such as age, ethnicity, cultural and socioeconomic differences, and level of education were not assessed so such comparisons were not possible. Tablet counts were used to measure adherence; however, as each dose intake was not overseen, it was unclear if the medicines were taken.

What this paper adds

What is already known on this subject

- ⇒ Self-administration of medicines (SAM) postnatal women reported better satisfaction and pain relief using fewer analgesics. SAM can speed up the discharge process and should be offered at every postnatal unit.
- ⇒ Younger women and those with better general health are more likely to participate in SAM.

What this study adds

- ⇒ SAM contributed to high adherence of medicines.
- ⇒ SAM presents an opportunity to improve knowledge on factors contributing to constipation in postnatal women.
- ⇒ SAM can release time for midwives (MWs) to do other tasks.
- ⇒ MWs used the midwife formulary to write certain unprescribed medicines for SAM women and thereby speeded up the SAM process and did not require input from doctors.

Author affiliations

- ¹Lead Pharmacist, Women's Services, Royal Infirmary of Edinburgh, NHS Lothian University Hospitals Division, Edinburgh, UK
- ²Pharmacy Technician, Women's Services, Royal Infirmary of Edinburgh, NHS Lothian University Hospitals Division, Edinburgh, UK
- ³Pharmacy, Education and Research and Development, NHS Lothian University Hospitals Division, Edinburgh, UK
- ⁴Clinical Midwifery Manager, Women's Services, NHS Lothian University Hospitals Division, Edinburgh, UK
- ⁵Consultant Obstetrician, Women's Services, Royal Infirmary of Edinburgh, NHS Lothian University Hospitals Division, Edinburgh, UK
- ⁶Charge Nurse, ward 119, Midwifery, Women's Services, NHS Lothian University Hospitals Division, Edinburgh, UK

Twitter Moira Kinnear @MoiraKinnear

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Contributors SAW, Lead Directorate Pharmacist, Women's Services, Royal Infirmary of Edinburgh (jobshare post) – now retired. SAW received funding to cover service evaluation (this was not research) for additional input from the small clinical pharmacy team for Women's Service (1 WTE Lead Directorate (SAW and JC) 0.5WTE rotational Band 7 pharmacist and 1WTE Band 4 pharmacy technician – CH). SAW contributed to all aspects of this evaluation including design, data collection and evaluation and review from start to final submission. CH, Pharmacy Technician, Respiratory, Royal Infirmary of Edinburgh. Was with Women's Services during this study. She helped with questionnaire design, planning and production of support packages and data collection during evaluation. JC, Lead Directorate Pharmacist, Women's Services, Royal Infirmary of Edinburgh (SAW's jobshare partner) – now retired. Helped with reporting, interpretation of data and development of Lothian Midwife Formulary (LMF). MK, Head of Pharmacy Education, Research & Development for NHS Lothian – now retired, helped with entire evaluation (design, reporting and interpretation of data) and final evaluation analysis and review. PS, Clinical Midwifery Manager (Maternity Inpatients and Gynaecology), Women's Services, Royal Infirmary of Edinburgh. Supported ward based midwife led (planning, conduct, interpretation of data) and input into the development of LMF. NM, Consultant Obstetrician, Women's Services, Royal Infirmary of Edinburgh. Obstetrician input to LMF and protocol for evaluation plus design and planning. EW,

Charge Midwife (ward 119), Women's Services, Royal Infirmary of Edinburgh. Ward based input to planning, reporting and promotion of SAM project among midwifery team on postnatal ward; also input to LMF. SA, Lead Directorate Pharmacist, Women's Services, Royal Infirmary of Edinburgh – current Lead. Input to evaluation review and interpretation of data.

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Supplemental information – A

1 Content of the Lothian Midwife Formulary: LIST OF MONOGRAPHS IN BNF ORDER

Gastro-Intestinal System: Introduction

- Antacids: * Co-magaldrox (Mucogel®)
 • Compound Alginates (Peptac®)
- Laxatives: * Glycerol (glycerin) suppositories
 • Ispaghula husk (Fybogel®)
 • Lactulose
- Preparations for haemorrhoids: * Anusol® cream
 * Anusol® suppositories

Antispasmodics: Peppermint water

Cardiovascular: Introduction

- Dalteparin PGD 356A

Anaphylaxis: Introduction

- Adrenaline (epinephrine) 1 in 1000

Central Nervous System (CNS): Introduction - including morphine care pathway

Drugs used in nausea: Cyclizine injection

- Analgesics: * Diclofenac suppositories
 • Dihydrocodiene tablets PGD 172A
 • Equanox® or Entonox®
 • Ibuprofen tablets
 • Morphine injection
 • Paracetamol tablets, suspension, and suppositories

Genito-urinary System

Contraception: Introduction

- Desogestrel PGD 345AV1
- Etonogestrel PGD 347AV1
- Lidocaine PGD 346AV1
- Norethisterone PGD 344AV1

Obstetrics: Introduction

- Dinoprostone (Propess®) PGD 236V2A
- Ergometrine
- Oxytocin (Syntocinon®)- 3rd stage
- Oxytocin (Syntocinon®)- PPH
- Syntometrine® PPH

Mendelson's syndrome: Introduction

- Ranitidine PGD 171A

Nutrition and blood

Phytomenadione (Vitamin K) in neonate: Introduction

- * Phytomenadione (Konakion MM Paediatric®) - IM and oral

Iron and the management of anaemia: Introduction

- Ferrous fumarate tablets
- Ferrous sulphate tablets

Local Anaesthetics: Introduction

- Instillagel®
- Lidocaine - IV cannulation
- Lidocaine –for perineum
- Tetracaine gel (Ametop®)

Immunological Products: Introduction

- Anti D Immunoglobulin Antenatal 1500units (D-GAM® and Rhophylac®)
- Anti D Immunoglobulin Postnatal 500units (D-GAM®)
- Anti D Immunoglobulin Postnatal 1500units (D-GAM® and Rhophylac®)

Supplemental information B: Additional patients and midwives' feedback

Patients' positive feedback on SAM
Pain control was similar as I would at home.
Really liked the independence so I can do other things
As my baby was on NNU it took away the stress to rush back
Feel more prepared for home
First day I felt under pressure to do SAM but on the next day I felt it was a positive experience
First day I felt unsure but then it was better as the midwife helped her
Found helpful
Gave me some control back which was nice
Patient thought this was a good service.
Patient said system is easy to use, easy access and good service
Patient felt it was helpful to take own medicine and would do again
Patient felt more in control. Midwife was unsure as she is used to giving patients their medicines
Patient felt she would wish to do the SAM again. Midwife also thought it released her time.
Patient thought that it helped to manage her pain. Midwife was unsure as she had not done before
Patient said she would recommend to a friend
Patient will do again as found helpful. Midwife felt it released time
Patient felt that SAM can release time for other patients
Patient would recommend to a friend
Patient would wish to do SAM again
Patient said she didn't have to ask for medicines and felt positive about this.
Saves time for everyone
Yes, much easier and no need to buzz and wait to get meds
More independence - helps 'training' for when at home
Preparation for SAM at home
Teaches you about what to do when you get home
Very useful to do as gave me independence
More independence
More flexible. Allowed me to continue my normal routine of taking meds and I knew why and what I was taking rather than a midwife just giving me my medicines
More efficient use of midwives' time tending to other needs of patients rather than dispensing routine analgesia to me
I think it is a good way to help understand how to take medication when you have to go home. Made me more aware of how and what I should take
Good to know more about medicines, delay on waking & whether they are actually needed (when you forget to take them and get sore)
Didn't need to wait for my pain relief from MW. Felt more in control. Learned more about medication and how to use them properly
A better understanding of medicines I would be discharged with
Able to control pain relief without hassling staff
Already knowledgeable about meds as I'm a pharmacist
Did not have to bother people if I need pain meds
Very satisfied and would encourage others. Midwife not clear about the SAM process.
Very satisfied. Midwife tried to give me her medicines as well and she was confused why I refused
Would bring in medicines if was told what I needed
Would participate again if I was well enough
It worked for me but would not work for older patients
Would participate in SAM in a future admission if available and I did not have my own medicines available
Felt I had a sense of autonomy in my recovery. Felt I wasn't 'pestering' busy midwives.
Felt more in control of pain relief. Could take PRN medicine as soon as I felt I needed it without having to buzz midwives. Freed up midwives' valuable time for other roles
It is very useful to have further information and also saves time being able to manage your own meds

Patients' negative comments about SAM
Although I thought I was capable in hindsight I should not have done it
Patient felt if many medicines then could be confusing. Medicine chart not easy to use.
Patient would have liked this info on painkiller earlier from midwife as it was helpful
Too many things to think about. Found stressful
Midwife signed 'self' on kardex inappropriately even though I was self-administering my medicines
Would prefer a simpler/bigger form to sign. Would make it much easier
Found process added stress at first and was happier just to ask midwife for pain relief as much easier when tired
I became unwell and I decided to stop SAM. It was good when I was well
The timing was bad. I was emotional as baby was in NNU. It took too long to explain. I found explanation patronising.
I haven't needed medication out with standard times and was tired when I had to take them - hassle of having to get up for meds post c section / risk of getting dose wrong
Patient felt she didn't realise it was optional to do SAM as she misunderstood and consented to do
Sometime because patient is self-medicating then midwives did not check on them very often
Midwives' negative comments about SAM
MW felt less involved with woman's care - ie pain management
Not sure about SAM. I'm old school and missed my medicine trolley
Not sure how it works and concerned about patients not administering correctly
Midwife has to do BP before meds anyway so better if she did meds.
Going round with medications for others at same time anyway so see no point of SAM
Patient asked me to give her drugs each time
Had to prompt patient to take regular meds. Kardex missing from bedside so unable to give ibuprofen until found. Still required dalteparin and nifedipine to be given by midwives at specified times.
Patient not remembering to fill in Kardex
Patient forgot to sign one dose taken but quantity was correct
Patient required prompting to remember
Patient was not well so had to stop SAM
Patient weepy and tired and felt she had so many things to concentrate on during night
Midwife felt happier to give patient drugs rather than patient taking themselves
Midwife was not familiar with SAM and not sure what to do
Patient felt overlooked as I was not at bedside often as patient was doing her own drugs
Midwife was unsure regarding SAM process. Some patients took medicines late (no definition of late?)
Patient left locker open with key
Pt left key in locker – midwife conscious regarding safety of medicines and other people accessing locker
Patient found lockers awkward to use. Midwife said she is unsure of the SAM programme.
Locker key not working and no pens for patients
Had to give meds as locker key was sticking
Key for locker sticking so midwife had to give patient medicine
Patient was not remembering to fill in Kardex
Patient was tired and have a baby to look after
Lock on medicine locker difficult to lock and unlock again so needed help from staff to do so
Faulty lockers/key so took longer for pharmacist to set up.
Patient forgot to log dose but count correct and next day was good
Midwife unsure of SAM process so not sure how useful.
Patient felt that it was good to have added support when needed.
Midwife use medicines from this patient locker to give to another patient's dose so count was wrong
Midwife would prefer a shorter logging paperwork
Checking that patient has correctly filled in on kardex and taken them effectively
As midwives we are taking on lots of extra roles. I feel that I would not have the time to assess and monitor the patients with regards to SA as well as all the other things I have to do
Dalteparin was missed as patient was SAM and midwife thought patient was also administering her dalteparin but she was not trained (Note: all SAM patients on ward cumulative log sheet)
Midwife at night not aware of SAM and gave medicines from her stock medicines whilst she did her rounds
Wrong amounts in medicine counts as night midwife gave medicines from own stock and not from patients' locker

Midwives' positive comments about SAM
Working well with support in place at present. Makes mum independent
Allows me more time with women for midwifery/feeding care
Patient said process was easy to use and help her take her medicines
Patient said she preferred this system of taking her medicines
Both patient and MW happy with SAM
Found it very beneficial for this woman
Patient said she would do again as good system. Midwife said set up by pharmacy make it helpful.
Great for mums to be independent. Needs pharmacy technician and pharmacist support to be viable.
Great system and worked well for this individual
Patient had baby on NNU so felt it gave her freedom and did not have to wait to get her medicines
Patient very at ease with her medicines at discharge
Patients who are taking meds at home should be allowed to SA when in hospital
Patient can manage own pain better
Empowering to patients to remain in control of own meds
Patient very happy no waiting for pain relief and good pain control. Patient felt more control and more aware of what they are taking. overall good scheme and glad I took part
Gives patient independence especially if was already taking regular medicines before admission
Gives patients more independence with medicines
Gives patient control over analgesia. Own decision making.
Good system for women with good awareness and without complex issues
Keeps patient up to date and informed. Pharmacy technician helped midwives with discharge drugs
Mum able to have analgesia as soon as possible
Midwife felt that this SAM release time to look after other patients
Midwife felt that this SAM release time to look after other patients
Midwife felt that SAM is positive and empowering for mums
Midwife found SAM useful. Patient said it is same as she manages medicines at home.
Midwife said SAM good for mums with baby on NNU
All midwives must be made aware if her patient is SAM (Note this is logged on ward sheet)

Paracetamol tablets, suspension and suppositories	
Legal status (GSL, P or POM on exemption list, or PGD)	<p>Tablet 500mg: GSL - up to 16 tablets; P - 17-32 tablets and POM >32 tablets (PGD required) ie legal status depend on pack size</p> <p>Suspension 250mg in 5ml: GSL- up to 160ml; P - > 160ml</p> <p>Suppository 500mg and 1g: P</p> <p>Midwife Exemptions - midwife can supply up to 32 tablets 500mg (GSL or P), suspension 250mg/ml >160ml or up to 10x500mg or 10 X 1g suppositories</p>
Patient group	Antenatal women and postnatal women and until discharge from midwifery care with a maximum of 32 tablets.
Clinical indication	Mild to severe pain alone or in combination with other analgesics where appropriate.
Pharmacology (Onset and duration of action where appropriate)	<p>Paracetamol is a mild analgesic with antipyretic activity. The mechanism of analgesic action is not known. It may act mainly by inhibiting prostaglandin synthesis in the central nervous system and to a lesser extent through a peripheral action by blocking pain-impulse generation.</p> <p>Onset of action within 30 minutes to 2 hours and analgesic effects lasts 4-6 hours. Opiates can delay the onset of action.</p>
Pharmaceutical form, strength, route of administration	<p>Tablets (standard or dispersible) contain 500mg Suspension contains 250mg in 5ml For oral administration.</p> <p>Suppository contains paracetamol 500mg or 1g. For rectal administration.</p>
Dose, frequency and maximum number of doses or period of time for administration or supply	<p>Oral or rectal 1g every 4-6 hours as required or 6 hourly regularly</p> <p>The minimum interval between each dose must be at least 4 hours.</p> <p>Only use rectally if oral route is not possible. Give orally as soon as a woman is able to take anything by oral route.</p> <p>Maximum dosage: ≥50kg and no additional risk factors for hepatotoxicity – 4g/day. ≥50kg with additional risk factors for hepatotoxicity - 3g/day (see "Cautions" for risk factors - refer to an authorised prescriber or doctor). <50 kg – 3g/day but review pain relief as dose can be increased to 4g/day if no additional risk factors and pain control is poor.</p> <p>Note the duration of pain relief is 4-6 hours so if prescribed 8 hourly then it would be advisable to stagger doses of other analgesics.</p> <p>It is dangerous in over-dosage therefore do not administer within 4 hours of other products containing paracetamol including by parenteral route and do not exceed maximum dose.</p> <p>Continue until discharged from midwifery care. Midwives can supply a maximum of 32 tablets 500mg (or 500ml of suspension) at discharge.</p>

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Paracetamol tablets, suspension and suppositories	
Writing of medicines by midwives: examples	<p>Write in “once only” section of Medicine Chart. “Regular” and “as required” doses can only be written for women who are self administering medicines”</p> <p>1 Inpatient - Paracetamol tablets</p> <p>Medicine (Approved Name): PARACETAMOL Dose: 1g Route: ORAL Frequency: Regular: 06:00, 12:00, 18:00, 22:00 or As required: 4 – 6 hourly. Max 4g in 24 hours Notes: For pain Initial supply: ≤ 32 500mg tablets</p> <p>1.1 At discharge (TRAK IDL) - Paracetamol tablets</p> <p>Discharge Medication: PARACETAMOL Tablets Dose: 1g Frequency: Every four to six hours as required. Max 4 doses in 24 hours. Additional info: Supply ≤ 32</p> <p>2 Inpatient - Paracetamol S/F suspension</p> <p>Medicine (Approved Name): PARACETAMOL S/F suspension Dose: 1g (20ml) Route: ORAL Frequency: Regular: 06:00, 12:00, 18:00, 22:00 or As required: 4 – 6 hourly. Max 4g in 24 hours Notes: 250mg/5ml. For pain. Initial supply: 500ml</p> <p>2.1 At discharge (TRAK IDL) - Paracetamol S/F suspension</p> <p>Discharge Medication: PARACETAMOL S/F Suspension Dose: 1g Frequency: Every four to six hours as required. Max 4 doses in 24 hours. Additional info: 250mg/5ml. Supply 500ml. Supply at discharge only if it has been prescribed on Medicine Chart and ordered on an Individual Patient Supply request. Order item on TRAK as the sugar free (S/F) suspension</p> <p>3 Inpatient - Paracetamol suppositories (Write in “once only” section of Medicine Chart)</p> <p>Medicine (Approved Name): PARACETAMOL Dose: 1g Route: PR</p> <p>SIGN and PRINT NAME followed by (MW)</p>
Contra-indications/exclusion criteria	<ul style="list-style-type: none"> ▪ Known hypersensitivity to paracetamol or its components. ▪ Severe renal and or liver disease. ▪ Known chronic alcoholics. ▪ Given paracetamol-containing products within the last 4 hours.

Paracetamol tablets, suspension and suppositories	
Cautions and action that will be taken if a caution applies	<ul style="list-style-type: none"> ▪ Moderate to severe renal impairment or history of hepatic impairment (especially non-cirrhotic alcoholic liver disease), G6PD deficiency, acute hepatitis, haemolytic anaemia, alcohol abuse, dehydration and those who are likely to be glutathione depleted such as with chronic malnutrition, eating disorders, cystic fibrosis, HIV, starvation, cachexia. ▪ Some paracetamol brands contain sorbitol so caution with use in known hereditary fructose intolerance. ▪ Some products contain sodium so check brand if this will pose a clinical problem. ▪ Check and document any allergies. ▪ Check and document past medical and drug history and current medication intake to ascertain potential for overdose. ▪ If a caution applies consult with an authorised prescriber/ doctor before administration or supply. ▪ Document consultation in woman's maternity record.
Medicine interactions and action that will be taken if a patient is taking a medicine that may interact	<ul style="list-style-type: none"> ▪ Alcohol (chronic): increased risk of hepatotoxicity. ▪ Anticonvulsants: (carbamazepine, phenobarbitone, phenytoin or other drugs that induce liver enzymes): – risk of hepatotoxicity ▪ Metoclopramide : increases rate of absorption. ▪ Warfarin: with 4 g of paracetamol per day for at least 4 days may enhance INR and increase risk of bleeding. ▪ Medicines unlikely to be used during pregnancy and immediate postnatal period: probenecid, salicylamide, domperidone, colestyramine, isoniazid ▪ Refer to current BNF for latest information on interactions. ▪ If there is a drug interaction, consult with an authorised prescriber/ doctor and pharmacist before supply. ▪ Document consultation in woman's maternity record.
Potential adverse reactions and side effects including actions to be taken if adverse drug reaction is suspected	<ul style="list-style-type: none"> ▪ On labour Nil ▪ On the neonate Nil ▪ On breast feeding Nil ▪ Cardiovascular: hypotension. ▪ Immune system disorders: Very rarely allergic reactions including anaphylactic shock. Cutaneous hypersensitivity reactions include skin rashes, angioedema and Stevens Johnson syndrome/toxic epidermal necrolysis. ▪ Haematological: Isolated cases of thrombocytopenia, agranulocytosis, leucopenia, and neutropenia. ▪ Liver: abnormal hepatic function, liver damage following overdose. ▪ Respiratory: bronchospasm more likely in asthmatics who are sensitive to NSAIDs or aspirin. ▪ Skin: Rashes. Redness of the mucous membranes of the rectum and minor local vascular changes after rectal route. <p><i>Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme at:</i> http://www.mhra.gov.uk/yellowcard</p>

Paracetamol tablets, suspension and suppositories	
Overdose	<p>Liver damage is possible in adults who have taken 10g (20 tablets of 500mg) or more but 5g or more may lead to liver damage if the woman has other risk factors such as liver dysfunction, known alcoholism, chronic malnutrition (see Caution).</p> <p>Symptoms of overdose in the first 24 hours are pallor, nausea, vomiting, anorexia and abdominal pain. Liver damage may become apparent 12 to 48 hours after ingestion. Abnormalities of glucose metabolism and metabolic acidosis may occur. In severe poisoning, hepatic failure may progress to encephalopathy, haemorrhage, hypoglycaemia, cerebral oedema and death. Acute renal failure with acute tubular necrosis, strongly suggested by loin pain, haematuria and proteinuria may develop even in the absence of severe liver damage. Cardiac arrhythmias and pancreatitis may occur.</p> <ul style="list-style-type: none"> • Immediate assessment/treatment is essential even in the absence of above symptoms - refer to doctor. • Manage in accordance with established treatment guidelines or see BNF overdose section. • For further advice contact National Poisons Centre 0844 892 0111
Action if patient declines	<ul style="list-style-type: none"> • Refer to authorised prescriber or doctor. • Document in woman's maternity record.
Additional advice and information	<ul style="list-style-type: none"> • Advise woman to contact authorised prescriber/doctor/midwife if condition worsens or symptoms persist. • Give the manufacturer's Patient Information Leaflet to the woman.
Patient monitoring arrangements during and after treatment and follow-up required	<ul style="list-style-type: none"> ▪ Monitor pain scores regularly for at least 24 hours for moderate to severe pain. Follow up depends on the prescribing condition ▪ Refer to doctor if response is inadequate after regular dosing as part of triple or duo combination analgesics regimen. ▪ Antenatally if 1g dose is ineffective after 2 hours refer to an authorised prescriber or doctor. ▪ For mild transient pain, if response is inadequate about 2 hours after 1g dose refer to an authorised prescriber or doctor. ▪ For after pains, if response is inadequate about 2 hours after 1g dose, add or use ibuprofen alone depending on severity of pain. ▪ Refer to an authorised prescriber or doctor if response is inadequate after regular dose as part of triple or duo combination analgesics regimen.
Particular storage requirements	-
References <ol style="list-style-type: none"> 1 Summary of Product Characteristics (GlaxoSmithKline Consumer Healthcare - oral) last updated on eMC 19/07/2017 and (Actavis)- parenteral) last updated on the eMC 05.07.2017. http://www.medicines.org.uk , accessed on 13.08.2017 2 British National Formulary http://www.bnf.org, accessed 13.08.2017 	