

## Title page

**Title of paper:** Problematisation and regulation: bodies, risk, and recovery within the context of Neonatal Abstinence Syndrome.

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**Short title (page header):** NAS: bodies, risk and recovery

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## Detailed response to reviewers

We would like to thank the peer reviewers for their extremely helpful comments, which we have responded to in full – see below.

For ease of reference, we include each reviewer comment followed by our response.

### Reviewer #1:

Logics of care: the rationale for using it in this paper could be expanded, and it's not clearly explained what a logic of care is (only that it's not a logic of choice). On p7 it's explained that the concept was found to be more accurate than choice in Mol's study, but is it used here because the same circumstances are thought to apply as in Mol's study? What are the specific characteristics of a logic of care that are beneficial here?

We agree that the concept of Mol's 'logic of care' and how we used it in the context of this study was not clearly explained. We have therefore revised our explanation on **page 7** to indicate that the concept differs from a more rational 'logic of choice' model in healthcare to one that incorporates other 'logics' influenced by differing systems of care, relationships, practices, values, emotions, structures, technologies and individuals with very diverse lives. We also explain that our use of the concept in the paper goes beyond Mol's idea of a singular 'logic' of care, to multiple logics of care, since this fits more broadly with the idea of plurality, fluidity and diversity among different actors in the field of parental substance use (where there are contested and contradictory paradigms).

On p11, the data is explained as both upholding and subverting logics of care. I understand that it conforms to and diverges from clinical ideas about connections between drug use and NAS, but is that the same as subverting/upholding logics of care?

Yes it is the same, or can be the same – so while professionals might talk about clinical ideas in respect of NAS (e.g., its causes and consequences) and may be concerned with treating NAS and ensuring 'good' outcomes for everyone; we argue that some of these 'caring' practices can have the opposite effect (i.e. unintended negative consequences). Using a logic of care as a lens, allows us to examine the role of values, emotions, structures, processes, technology etc, since these are all employed towards providing 'care' to the family. Mol's analysis suggests that logics of care are 'better' than logics of choice - more realistic and humane. We argue that the accounts of professionals and parents in our study speak to logics of care but this does not always have benign effects/implications because they can be subverted or distorted by contested and contradictory understandings of risk and recovery. We have revised **page 10** to expand our analysis on this section.

The conclusions about troubling antenatal logics of care on p14 need to be substantiated a little more. The participants didn't talk about psychopathology or risk-taking behaviour directly, and the harsh judgement of parents on other parents' use is not unusual (see e.g. Banwell and Bammer, IJDP 2006) and not obviously connected to a logic of care. It's not that I disagree with the argument, but it seems to overstretch the data as it is and could do with a bit more explaining.

We have now changed this section to include a clearer description of the links made between logics of care and the mother's psychopathology (psychological and behavioural deficits) and responsibility – and how this common sense understanding of addressing these issues can be potentially counter-productive (see **page 15 & 16**).

Similarly, on p19, the argument for identification and evaluation of systems where supportive caregiving environments are possible seems very sensible, but not directly derived from the data or data analysis: the current policy environment in which intensive and intrusive interventions are made and abstinence encouraged certainly makes less sense than the one being advocated, but the specific contributions of the data to this insight could be more specifically elaborated.

We proposed this approach as an alternative way of conceptualising, articulating and examining 'care' for this population given that the accounts of parents and professionals illustrated that supportive caregiving environments were not foreground (and were actually subverted or concealed by logics of care that centred on risk and recovery in the bodies of infants and women). This is not to say that professionals and parents didn't talk about supportive care, they did, its just that it was largely overshadowed by the rhetoric on governing risk. We have added a note on **page 19** to indicate that this is an alternative way of framing NAS and we have also highlighted this process at the end of the findings section.

This isn't a criticism, but the professional differences between the social worker (who has a strong orthodox child protection focus) and the addiction nurse (who has a more holistic and realistic view) is interesting and recalls previous studies by, among others, Brid Featherstone, Kate Morris and Sue White ( Brit J. Social Work, 2013).

We agree that professional differences were interesting in this study and we could only touch on some of these tensions in relation to contradictory understandings about drug treatment and recovery, for example.

Reviewer #2:

The "logics of care" intervention from Mol seems an appropriate match, but I found the writing in this section introducing the concept a little hard to follow (starting at the bottom of page 5 onto to page 6). Perhaps more clarity could be provided in this description, especially the last two sentences that seek to describe how the theoretical intervention of "logic of care" help us to understand risk and recovery.

See response to question 1, reviewer #1, where we attempt to address this point.

Why was the service provider data completed as focus groups and the parents done with individual interviews? What are some limitations of having providers potentially reluctant to speak to the roles, actions and biases of their colleagues or other health professionals in a group format?

Our rationale for choosing individual interviews with the parents and focus groups with practitioners is now detailed further **on page 6 & 7**.

Individual interviews were the method of choice because of the sensitive topic and the need to maintain confidentiality. We also thought that mother and father views and experiences of NAS might be quite different so interviewing them separately would be advantageous. Focus groups were chosen primarily because we were interested in exploring the multi-disciplinary context of responding to NAS and how this is negotiated among different disciplines and services.

In terms of potential limitations of the group format for generating data which might reveal tensions and differences between professionals, we accept that any group format (uni-disciplinary or multi-disciplinary) has its potential benefits and drawbacks in relation to generating useful data for

analysis in this type of study. There are obvious power dynamics and tensions between different disciplines - and within disciplines (e.g. doctors and nurses, social workers and midwives etc) - which tend to be more evident in multi-disciplinary focus groups, and can result in some reluctance to speak openly about these issues, but equally, tensions and dynamics can also be illustrative of the kind of relations which are at play in real world clinical practice. Conducting multi-disciplinary focus groups can be seen as a kind of artificial way of mirroring the practice context and using a lens of logics of care enabled us to capitalise on this dynamic

[I was curious as to why no community-based treatment professionals were enrolled in the focus groups?](#)

Our study did include community-based professionals – for example, community midwives, health visitors, community mental health (addiction) nurses, addiction psychiatrists who work in community-based treatment services, a GP and also social workers and early years workers from community-based social work teams. In fact the only hospital-based staff were postnatal ward midwives, neonatal staff and one hospital-based social worker. However, this comment reminded us that it was not evident in our paper so we have made this more evident **on page 6 & 7**.

[What happens after babies are treated for NAS, what is the community treatment context?](#)

In Scotland, and the geographical area where we conducted this study, babies with NAS are treated like any other newborn baby – that is, as soon as they are deemed to be well enough for discharge from the postnatal maternity ward, or neonatal unit, they go home with the parents, unless there has been a child protection decision to accommodate the infant (i.e. in an ‘out-of-home’ placement with a kinship carer or foster carer).

All babies, including NAS babies, are followed up in the community by the community midwife who visits the family at home up to 10 days postnatal, then the Health Visitor visits the family from 11 days postnatal onwards (until the child reaches primary school age). Families can also attend their general practitioner for general medical care. Thus, the community treatment context for infants is primarily ‘universal health care’ delivered by the NHS (free of charge). Our main regional NNU does have a community neonatal nurse who follows up babies in the community, if required, but practice differs between regions in this respect. Families might also be asked to attend an out-patient appointment to see the Neonatologist.

This helpful comment by the reviewer reminded us of the different health care systems across the world and the extent to which healthcare provision can play a significant role in the way infants and families are cared for in the community. We think a full explanation of the wider healthcare environment of this study is perhaps unwarranted but we have now included a ‘study setting’ paragraph **on page 6** and a short sentence to better describe the healthcare context of this study.

[How is medically-assisted treatment managed for women after mothers/parents leave the hospital in this context?](#)

Addiction treatment in Scotland and the geographical area where we conducted this study is a community-based treatment service, delivered by our National Health Service (NHS), free of charge to all opioid-dependent parents. In effect, this means that ORT is provided to parents irrespective of whether they are in hospital or living in the community. Addiction doctors or the patient’s General Practitioner (Family doctor) prescribes OST and the patient picks up their prescription from their local community pharmacy. Again, this comment helpfully reminded us of the very different

addiction treatment services worldwide so we have included a short statement under 'study setting' on page 6 to provide a little more information on the provision of OST for study participants.

There is less description in the paper about "recovery" and its theorization, than about risk, which dominates the analysis.

In our paper we attempt to show that 'risk' and 'recovery' in relation to NAS is largely intertwined in the narratives of parents and professionals, primarily because the notion of 'risk' (and 'risky parents') was so closely tied to illicit drug use and in turn, 'recovery' was so closely tied to 'stability' on ORT, or abstaining from illicit drug use. Either way, the focus on risk/recovery was conceptualised primarily in relation to drug use *per se*, and was therefore constructed as the responsibility of the parent themselves, rather than say other factors in the lives of families e.g. lack of social support, housing, jobs, money etc. This comment reminded us that this framing of recovery was not clearly evident in our findings section so we have expanded our findings somewhat to make this more explicit – see revisions on pages 11 & 12 & 14.

The fact that many mothers or sets of parents had children that were "system-involved" or not otherwise in their parental custody seemed so important to the analysis, but it is mentioned in passing in the methods section merely as a sample descriptor (page 7).

We agree that the parent's history of previous children being either taken into care, or voluntarily placed with kinship carers, or indeed living with previous partners, is important to consider and may have influenced parents' views and experiences of caring for their newborn baby at risk of NAS. However, the majority of the parents in our study did not talk at length about their other children - they were primarily focused on their newborn baby and of course, we encouraged this focus because of the nature of the study. Although most parents were keen to 'prove' that they were good enough parents and could look after their baby, this seemed to be the case irrespective of whether they had previously been involved with social services. In other words, there wasn't anything that emerged in the data that was unique, at least not in respect of recovery or risk that could be included in this paper.

Language: I would suggest that the author(s) avoid using the potentially stigmatizing language of "drug-using parents" and adopt instead "parents who use drugs" in order to not reduce individuals, in all their complexity, to behavioural descriptors.

We agree with this point and have changed the language/terminology throughout the paper (highlighted in yellow).

Lastly, we have included **two more references** to substantiate points made in response to these comments.

## Abstract

**Background:** Neonatal Abstinence Syndrome (NAS) is an anticipated effect of maternal drug use during pregnancy. Yet it remains a contested area of policy and practice. In this paper, we contribute to ongoing debates about the way NAS is understood and responded to, through different treatment regimes, or logics of care. Our analysis examines the role of risk and recovery discourses, and the way in which the bodies of women and babies are conceptualised within these.

**Methods:** Qualitative interviews with 16 parents (9 mothers, 7 fathers) and four focus groups with 27 health and social care professionals based in Scotland. All the mothers were prescribed opioid replacement therapy and parents were interviewed after their baby was born. Data collection explored understandings about the causes and consequences of NAS and experiences of preparing for, and caring for, a baby with NAS. Data were analysed using a narrative and discursive approach.

**Results:** Parent and professional accounts simultaneously upheld and subverted logics of care which govern maternal drug use and the assessment and care of mother and baby. Despite acknowledging the unpredictability of NAS symptoms and the inability of the **women who are opioid-dependent** to prevent NAS, logics of care centred on ‘proving’ risk and recovery. Strategies appealed to the need for caution, intervening and control, and obscured alternative logics of care that focus on improving support for mother-infant dyads and the family as a whole.

**Conclusion:** Differing notions of risk and recovery that govern maternal drug use, child welfare and family life both compel and trouble all logics of care. The contentious nature of NAS reflects wider socio-political and moral agendas that ultimately have little to do with **meeting** the needs of mothers and babies. Fundamental changes in the principles, quality and delivery of care could improve outcomes for families affected by NAS.

## Introduction

Lupton (2012) argues that the bodies of infants are framed as inherently ‘vulnerable’ and ‘at risk’, a framing which contributes to the imperative that parents (particularly mothers) engage in “intense, anxious” surveillance of their infants. In this paper, we examine how this conceptualisation of the infant body as ‘at risk’ emerges in accounts of Neonatal Abstinence Syndrome (NAS), and how this surveillance is connected to wider systems which seek to regulate drug-using bodies (Fraser & valentine, 2008). We argue that the obligation to monitor and measure is particularly acute for the ‘vulnerable’ *drug-exposed* neonate, and this has implications for the governance of **mothers who are drug-dependent** who gave rise to their infants’ ‘vulnerable’ condition. Lupton’s work addresses ‘routine’ antenatal and postnatal care, and she refers to parental (and professional) monitoring of ‘vulnerable’ infant bodies within the context of a normative ‘risk culture’, whereby any potential risks should be minimised: we show how this is implicated in accounts of NAS.

NAS is the most frequently cited ‘complication’ of maternal drug use during pregnancy – portrayed as a risk to the newborn baby, the mother-infant relationship, caregiving, child development and child welfare (McQueen, Murphy-Oikonen, & Desaulniers, 2015). NAS refers to a constellation of drug withdrawal symptoms identified in babies born to mothers who have used drugs of dependence during pregnancy, notably opioids (Hudak, et al., 2012). Not all infants develop symptoms but those who do normally display signs within the first few days after birth. The condition is relatively short-lived, lasting from several days to weeks, and symptoms vary considerably in onset, severity and duration (American College of Obstetrics and Gynecologists, 2017). Symptoms primarily involve the gastrointestinal, autonomic and central nervous system, resulting in a neonate who can be difficult to feed, settle and console (Hudak et al 2012) – see Table 1.

*Insert Table 1 here.*

Although NAS is an entirely “expected and treatable condition” (ACOG 2017: p.6), it remains an emotive and highly contentious subject (Terplan & Minkoff, 2017), and is in itself a contested diagnostic label. Some countries, especially post-Soviet nations, do not formally recognise NAS (WHO, 2014). Across the globe and within individual countries, there are contradictory approaches to identifying, measuring and treating NAS (Kelly, et al., 2016; O’Grady, Hopewell, & White, 2009); and while NAS is associated with maternal use of drugs, other factors are implicated in symptom severity in highly complex ways. For instance, the correlation between maternal opioid dose (e.g., methadone) and neonatal symptom severity is not straightforward (Cleary, et al., 2010). Some babies born to mothers on high doses of methadone exhibit minimal signs of withdrawal, while others born to mothers on low doses may show more significant signs. Symptoms vary depending on numerous other variables, including: genetic factors; type of drug/s used by the mother (including tobacco and SSRIs); maternal metabolism and net drug transfer across the placenta; placental metabolic rate; infant birth weight and gestational age; infant metabolism and excretion of the drug/s; as well as breastfeeding and the use of supportive comfort measures (Hudak, et al., 2012; WHO, 2014). Consequently, symptoms cannot be accurately predicted at an individual, mother-infant dyad level (Kaltenbach, et al., 2012).

***NAS: attitudes and approaches to maternal drug use during pregnancy***

A key issue in clinical literature pertains to the care of pregnant women and whether or not NAS, or its worst manifestations, can be prevented. However, there is conflicting evidence and little consensus on this issue, as well as historical and ideological factors which continue to plague practice. For example, the ‘choice’ of opioid replacement therapy (ORT) for mothers has evoked considerable debate, particularly in response to the recent MOTHER study (Jones, et al., 2008), which compared outcomes in babies born to mothers randomised to either buprenorphine or methadone during pregnancy. Buprenorphine resulted in better



NAS outcomes than methadone, but the attrition rate in the buprenorphine treatment group was higher. Ensuing disputes about whether buprenorphine should be recommended as ‘the drug of choice’ for pregnant women highlighted tensions between whose body we should be caring about most and what ‘risks’ we should be prioritising – mothers or babies? (McCarthy, Leamon, Stenson, & Biles, 2008).

Complicating matters, previous guidance on the care of **pregnant women who are opioid-dependent** recommended reduction of methadone to ‘the lowest possible dose’ with some guidance proposing very low, sub-therapeutic levels (<40mgs/day) to avoid NAS (Wolff & Perez-Montejano, 2014). Although this guidance was superseded years ago because of mounting evidence against this advice, its legacy remains (Chandler, et al., 2013). Coupled with the resurgence of drug policies which promote ‘recovery’ (often assumed to mean ‘abstinence’, or at least ‘proven’ drug reduction/stabilisation), current evidence and clinical guidelines on the use of optimal dose, maintenance ORT throughout pregnancy, has been adopted internationally but remains controversial (WHO, 2014).

### ***NAS: caregiving environments and parenting capacity***

NAS is frequently portrayed as a ‘risk factor’ for subsequent child abuse and neglect (De Bortoli, Coles, & Dolan, 2014). It is assumed that **mothers and fathers who are drug-dependent** will be unable to respond appropriately to the needs of a newborn baby with NAS. Literature on maternal substance use draws attention to ‘chaotic’ lifestyles dominated by drug-seeking behaviour, ‘risky’ or suboptimal caregiving environments, and mothers’ lack of ‘emotional availability’ and/or compromised ability to establish a secure attachment with their infant (Hatzis, Dawe, Harnett, & Barlow, 2017). Fathers and/or male partners are portrayed as absent, uninvolved, aggressive, uncaring and/or unsupportive of mothers (De Bortoli, et al., 2014). Within a prevailing view that drug use is incompatible with being a good parent, **mothers and fathers who are drug-dependent** are typically characterised as unfit

parents (Benoit, Magnus, Phillips, Marcellus, & Charbonneau, 2015; Whittaker, et al., 2016). Thus, care is orientated towards the requirement for parents, especially mothers, to ‘prove’ themselves worthy (and trustworthy) before they can be free of state intervention (including removal of their infant). Within such a context, the drug-exposed (‘poisoned’) body of the NAS infant becomes an ‘indicator of risk’ - of actual or potential harm (child abuse and neglect) - and abstinence becomes the idealised goal, with the production of ‘clean’ drug toxicology tests, a proxy measure of parenting capacity and being ‘a good enough parent’ (Chandler, et al., 2013).

### ***NAS: Models of Care***

With NAS, the inter-embodiment (Lupton 2012) of infant and caregiver is potentially disrupted, depending on the model of care in place in a given context. Current opinion remains divided on how best to care for infants and families affected by NAS (WHO 2014). The conceptualisation of maternal and neonatal bodies, the closeness or distance of the mother-infant dyad, is central to this. In clinical literature for instance, there is ongoing uncertainty regarding the effectiveness and long term consequences of pharmacological ‘comforts’ to reduce NAS symptoms, and in many cases, clinical guidelines indicate the need for ‘special care’ in neonatal units (NNU) (Grim, Harrison, & Wilder, 2013; WHO, 2014). At one extreme, this includes having infants admitted to the NNU immediately following the birth or symptom onset, entirely separate from contact with the primary caregiver, and isolated in an attempt to minimise light, noise and other stimuli (Boyd, 1999). In contrast, a parallel body of literature argues that NAS babies can be cared for adequately in out-patient settings and at home by the birth mother whenever possible, with the mother supported to ‘room-in’ with her baby, provide ‘skin-to-skin’ contact, breastfeed, and provide supportive attachment-focused infant care (Abrahams, et al., 2007; Knopf, 2016; Kocherlakota, 2014).

Within this approach, separation of mother and baby is proactively avoided and there is a distinct ‘low-interventionist’ (non-medicalising) approach.

### ***The wider context of NAS***

Studies which have explicitly addressed the wider social and cultural contexts of caring for NAS babies are sparse, though several ethnographic studies show fear of NAS, and stigma associated with the diagnosis, can affect treatment engagement of **pregnant women** (Boyd, 1999; Klee, Jackson, & Lewis, 2002; Knight, 2015). These studies suggest babies who exhibit symptoms attributed to NAS are understood to be at greater risk of being removed from the mother. Some qualitative studies have examined neonatal nurses’ experiences of caring for NAS babies (e.g. Maguire, Webb, Passmore, & Cline, 2012; Murphy-Oikonen, Brownlee, Montelpare, & Gerlach, 2010) and report a fairly negative and conflicted picture, with staff struggling to engage positively with families, and problematic attitudes towards **parents/mothers who are drug-dependent**. Two studies (Atwood, et al., 2016; Cleveland & Gill, 2013) conducted in the USA, explored the views of parents, revealing low levels of parental education and preparation for NAS, inconsistent and contradictory approaches to care of mother and baby, heightened feelings of stigma, guilt and blame, and the importance of good quality relationships and communication with neonatal staff.

### ***Study aim and theoretical approach***

This study aimed to explore ‘logics of care’ (Mol, 2008) that govern pregnant women who use drugs and babies at risk of NAS in Scotland, UK. In this paper, we focus on ways in which risk and recovery are represented and responded to, within the context of maternal drug use, child welfare and family life.

Our analysis is informed by feminist, materialist and poststructuralist theories. While drawing on accounts of NAS, we attend to how these represent the “socio-material arrangements” through which NAS is produced (Fomiatti, Moore, & Fraser, in press). This includes how

parents' account for interactions with services during and after pregnancy, and the particular 'logics of care' which are referred to by parents and professionals. Mol's (2008) logic of care refers to the complex ways in which 'good' healthcare is enacted. Her analysis contrasts this with a logic of choice, a logic she argues is erroneous, as it assumes the existence of rational, autonomous patients, and linear processes of evidence gathering and decision-making. A logic of care, Mol suggests, allows for consideration of the complex ways that healthcare can operate, dealing as it does with systems, relationships, practices, values, emotions, structures, technology and individual, sometimes ill, bodies which have diverse lives. In our usage of the concept, we view this as multiple, thus we consider *logics* of care. In this way, we examine the ways in which accounts of practices relating to NAS do orient around care (e.g., care of the baby, care of the mother/father, care of mother-infant dyad) but in different ways, and with different implications for different actors involved (e.g., mothers, fathers, infants, professionals). The focus of enquiry in this paper centres on exposing some of the different logics of care governing responses to NAS and how these are shaped by contested and contradictory understandings of risk and recovery.

## Methods

### *Design*

Our paper draws on data generated in a qualitative study involving interviews with parents (mothers who are opioid-dependent and their partners) and focus groups with health and social care practitioners who work with families affected by NAS. Ethical approval was granted by the local NHS Research Ethics Committee.

### *Study setting*

The study was conducted in Scotland, UK, from December 2014 – August 2015, with participants drawn from a major city, and neighbouring towns. The area included community-based addiction, maternity and child health services, two neonatal units (in separate hospitals), and a specialist multiagency home-visiting service for pregnant women who are

drug-dependent. All the families in the study had access to ‘universal health care’ (e.g. GP, midwifery, child health and neonatal services) and specialist secondary health care (e.g. addiction treatment), free of charge, as part of the UK National Health Service (NHS). This includes Opioid Replacement Therapy (ORT) – usually methadone or buprenorphine - provided by either community-based addiction treatment services or the GP, with medications dispensed via local pharmacy.

### *Parent participants and interviews*

We conducted in-depth semi-structured interviews with a purposive sample of 16 parents, including two single mothers and seven mother-father dyads (interviewed separately because of the highly sensitive and potentially emotive nature of the discussion). All the mothers were prescribed ORT and were recruited via community drug treatment, midwifery and child health services. Fathers/partners were invited to take part if the mother agreed to their involvement in the study. Parents were interviewed between two weeks and six months after the birth of their baby and were provided with a £20 gift voucher to cover out-of-pocket expenses. Interviews were conducted by [Author2], lasted approximately 60-90 minutes, and explored understandings of NAS and experiences of caring for a baby at risk of NAS as well as topics related to the parents’ drug use and drug treatment, social and economic circumstances, contextual features of their lives, and experiences engaging with health and social services during and after pregnancy, with a particular focus on NAS.

A profile of parent participants is included in Table 2. Aged between 23 and 41, all but two had older children. In the majority of cases, older children were living elsewhere (foster care, kinship care, or with ex-partners). Thus, while all participants had custody of their most recent baby, six of the nine mothers (and one father) did not have parental responsibility for their older children. Fathers with older children described previous relationships where their ex-partner retained child custody and contact with these children was sporadic or absent. At the time of interview, all but one parent (a mother on maternity leave) were on various forms

of welfare benefits. All parents were living in rented social housing, and many described recent experiences of housing insecurity or homelessness.

*Insert Table 2 here.*

### ***Professional participants and focus groups***

Alongside these interviews, four interdisciplinary focus groups with 27 health and social care practitioners were conducted. Focus groups were chosen because they are considered the 'method of choice' when the aim is to explore and examine group interaction, group processes, meanings and norms and where consensus and/or debate between participants is important (Barbour, 2007). Professionals were invited to take part on the basis of known experience working in this area – either with parents who are drug-dependent, their infants or both - with care taken to include a mix of community and hospital-based practitioners who normally engage with families as part of 'multi-disciplinary care pathway'. Focus groups explored participant's understandings of NAS, experience of preparing parents for a baby with NAS, including monitoring and treatment of mother and baby, and sought to engage group members in deliberative discussion and debate about these issues. They were jointly conducted by [Author2] and [Author1] and lasted approximately one hour.

A profile of the four focus groups is included in Table 3. Of the 27 participants, 21 were NHS (healthcare professionals) and 6 were Social Care staff, 23 were female, 4 male, and disciplines included: community midwives, postnatal midwives, neonatal nurses, health visitors (community child health nurses), community mental health (addiction) nurses, a general medical practitioner (GP), consultant psychiatrist in addictions, consultant obstetrician, consultant neonatologist and qualified social workers in community and hospital 'Children and Families' teams and foster care services. Participants also included health and social care staff from a community-based specialist pregnancy service for women with alcohol and drug problems.

*Insert Table 3 here.*

### ***Data analysis***

Interviews and focus groups were audio-recorded, transcribed verbatim, anonymised, and uploaded to NVivo v10 to support data coding and management. Data were coded and analysed by [Author1] and [Author2], using inductive content and thematic coding, and informed by narrative and discursive approaches - focusing on stories and the construction of meaning, subjectivities, representations and performative work. A constant comparative method (Silverman, 2014), was then used to compare and contrast discourses and themes across the data sets – for example, differing representations of the NAS baby, mother and father, practices in relation to observing and ‘scoring’ the baby and ‘drug testing’ the mother, and discourses surrounding ‘medication-assisted’ recovery and the treatment and care of the mother and mother-infant dyad. Analytic summaries were discussed and deliberated upon at monthly research group meetings and implications of the findings were considered within the context of current and alternative models of care.

### **Findings**

Multiple and contradictory versions of risk and recovery emerged in the accounts of parents and professionals. In our analysis we illustrate how these discourses served to both compel and trouble all logics of care surrounding NAS - primarily in relation to what might be understood, and enacted upon, as forms of ‘accepted knowledge’ and ‘effective interventions’ during pregnancy and after the baby is born. For example, ‘risk reduction’ strategies, ‘monitoring’ and surveillance methods, ‘drug management’, treatment and care of mother and baby, and ‘safeguarding’ approaches governing parental caregiving.

### ***Producing and troubling antenatal logics of care***

Questions about NAS consistently led to discussion and debate regarding the *causes* of NAS and the extent to which maternal drug use during pregnancy (including ‘compliance’ with drug treatment plans) played a role in the likelihood of NAS being ‘severe’.

On the one hand, participant stories about antenatal care served to demonstrate and reiterate ‘current’ thinking about the causes of NAS, such as why some babies develop severe symptoms and others do not. Most professionals, for instance, acknowledged that severity of NAS was not directly related to ORT dose or the amount of opioid drugs the mother was taking, meaning that the ability to fully predict, and therefore avoid NAS was impossible to do. Emphasis instead was placed on the unpredictability of NAS:

I think that's one of the hardest things, you can never predict just how badly a baby can withdraw. You can look at mum's drug use and think, this baby is going to be really bad and it turns out the opposite. (Neonatal Nurse, FG1)

One mother reiterated a version of this message:

You could be on a really low dose of [opioid] and your baby could have really bad symptoms or the other way about. It just kind of, totally depends on the baby itself. Everybody's different. That's all I'd really been told, just try not to ...get too stressed about it. (Hayley, mother)

However, accounts also cast doubts about this perceived wisdom by drawing attention to contradictory beliefs and practices and other explanatory possibilities. For example, the belief that illicit drug use and by inference, the ‘misbehaviour’ or drug-addicted pregnant women, might be the real cause of severe neonatal withdrawal symptoms:

It can be difficult when the baby ...does have NAS, for professionals who maybe have some limited knowledge to automatically go well, that means she's been taking extra drugs during her pregnancy ...I've had to explain well, we don't know that. We can't then go and write that in [child protection] reports. It could be just, that this is a baby that is more susceptible ...that's what I've found difficult with a recent case ...professionals jumping to conclusions and then saying that in front of the parent, when the parent's had that information from the Neonatal Unit that actually, there isn't a direct correlation. But there's a chance that she was taking extra [drugs] during her pregnancy ...there's a lot of unknowns, and I suppose when you're planning for the future of the baby that's difficult’ (Social Worker, FG2)



This performative work (Fomiatti et al, in press), served to both uphold and subvert logics of care, drawing on the rhetoric of governing risk and ‘risky parents’ (Featherstone et al, 2014). In the excerpt above, for example, ‘unknowns’ about maternal drug use could explain professionals erroneously ‘jumping to conclusions’ about the cause of NAS being attributable to the misbehaviour of drug-addicted mothers when ‘actually, there isn’t a direct correlation’. At the same time, ‘unknowns’ about maternal drug use could justify caution when making decisions about the future safety and wellbeing of an NAS baby. Conversely, both logics of care invite a focus on risk and responsibility (identifying ‘susceptible’ or vulnerable babies and unfit mothers who take ‘extra’ drugs) and infer that the cause of NAS is perhaps something that ‘we don’t know’ (despite the ‘Neonatal Unit’ saying otherwise). Introducing uncertainty, can be seen as a rhetorical device to construct an array of different subject positions and material realities (reckless mother who is to blame for her infant’s poor condition or just a predisposed baby whose innocent mother is being unfairly accused of neglect). These logics of care obscure however, other ways of representing the baby with NAS and responding to the mother-infant dyad – for example, by focusing on meeting the care needs of the infant, and providing appropriate family support to facilitate mother-infant caregiving. What was foreground in professional accounts was identifying and managing (governing) risk, *not* the meeting of need. Noticeably, it was not simply about clinical ideas on cause and effect, since these were contested and contradictory. Rather, professionals were speaking to wider social, political and moral positions on working with families affected by drug use, including the role of the state in family life.

Professional accounts which unsettled ideas about whether or not NAS severity was related to the mother’s illicit drug-taking behaviour (and therefore whether or not she was ‘to blame’ for her infant’s condition) were echoed in parents’ accounts:

I always thought that the reason the baby was withdrawing [was] because they [mothers] were on methadone and using on top [illicit drug use]. (Shelley, mother)

Just luck nae doubt ...[but] it probably depends what the mum's been up to. If the mum's been taking more drugs ...most people you speak to [will] lie to you about what they've taken. (Liam, father)

Parents' also spoke about their fear of losing custody of the baby if NAS was identified, despite feeling that they couldn't do anything to prevent it. Fear of being blamed for their infant's condition, and self-blame, was accompanied by an acute awareness of the stigma associated with maternal drug use, and being judged an unfit mother:

Before I had [the baby], if somebody said aye, their baby had withdrawn, I'd be like, that's shocking. Why could you no' get yourself sorted out, and get off the methadone and the drugs. But even I did it, so aye ...basically people are just this, scummy, basically because their baby's withdrawing ...[but] there's more issues to it. (Joanne, mother)

How I saw it, if the baby's got NAS you aren't getting your baby ...I was just visualising the baby care unit ...standing there, my baby screaming, no' well ...riddled with guilt, and blaming [partner] ...that was my visual ...signs of NAS, take a count, [NAS score] too high, baby care unit, and that's that ...and very judgemental, [like] the way they treated [partner] in the hospital. (Freddie, father)

Representations of **mothers who are drug-dependent** as liable, or potentially liable, for their infant's 'vulnerable' condition, invoked logics of care that centred on risk reduction and risk management strategies and elicited narratives which appealed to the value of treatment regimens and regulatory practices to 'assess' and 'manage' these risks. For example, 'stability' on ORT and drug testing pregnant mothers in an attempt to either prove, or disprove, illicit drug use:

Different people have different opinions ...I had a patient who appeared stable [on methadone], I mean, she was testing negative whenever I took drug screens and her baby was very, very, very, unwell ...and some professionals have been saying, well she was obviously abusing [illicit drugs] then. But, there wasn't any evidence that she was. (Addiction Nurse, FG1)

While most participants acknowledged that ORT was an ‘accepted’ treatment during pregnancy and would likely benefit mother and baby - for example, through better ‘engagement’ with services and access to ‘recovery-orientated’ services – ‘stability’ was repeatedly emphasised and conflated with better outcomes for the baby *in relation to NAS*. From this perspective, the requirement to remain ‘stable’ became a moral imperative, signifying affirmative action to reduce NAS risks. Some parents appealed to these moral discourses and conveyed the idea that mothers who ‘chose’ to take illicit drugs, rather than comply with OST regimens, ought to be harshly judged (and ashamed of their behaviour):

So-called friends that have chosen drugs over their children, they know exactly what they’re doing ...they know their baby’s going to come out rattling [withdrawing] ...it disgusts me to a certain extent ...I’m not one to preach, ‘cause my baby had NAS as well, but we made a choice to stay maintained [on methadone] ...to keep her chances of it [NAS] being low. (Stuart, father)

I’ve seen with other mums, one [women I know] ...still kept dabbling [taking illicit drugs], compared to me ...like just sticking with methadone, and she’s no’ getting her baby home ...well it’s in the [neo]natal unit now so it’s like ...your baby’s really sick even though you knew the risks. (Joanne, mother)

Similarly, professional accounts questioned the extent to which pregnant women who are opioid-dependent can ‘control’ their drug use, make ‘lifestyle choices’ and are ‘motivated to change’ for the ‘right’ reasons. Shifting positions constructed mothers in contrasting ways - for example, as ‘vulnerable’, as untrustworthy, as responsible, and as rational and capable actors and decision-makers. The issue of whether mothers could simply ‘decide’ to remain ‘stable’, or reduce or maintain abstinence (and elect to embark on a ‘recovery journey’), or continue to use illicit drugs, was woven into stories about emotional responses to NAS:

We actually bought a [NAS] withdrawing doll ...it’s a real shocker for the women ...it shakes and it screams, the high pitch scream, and they see it, and it’s very visual, and it works. I don’t know if it totally works for them, to stopping [illicit] drugs ... [but] two or three [women] every time we do it, start crying, really upset. ...It’s too late obviously, when we show the dolls, but then sometimes it’s enough just to say right, the rest of the pregnancy, I might abstain from heroin. (Midwife, FG1)

There's no empathy ...people just don't appreciate what these women have been through ...you know, their upbringing, their life, what's brought them to this point ...a lot of staff ...think it's a lifestyle choice, they choose to take drugs ...but it's not as straightforward as that ...and if you throw domestic violence in ...childhood sexual abuse ...horrendous things ...it's not a lifestyle choice, who would choose that life?, nobody does ...I don't condone it, but I can understand it. (Neonatal Nurse, FG1)

These accounts served to both support and refute logics of care that either apportioned or relinquished individual responsibility for risk-taking behaviour **and recovery**, and in doing so, maintained a focus on maternal 'risk factors' rather than other factors which might play a role in pregnancy and neonatal outcomes, **including quality of care.**

In fact, few participants articulated the dilemma that most mothers faced: if they followed advice to remain 'stable' on an optimum ORT dose during pregnancy, they would likely benefit from better overall outcomes for themselves and their infant, but they *would* produce a baby 'at risk' of NAS. Should their baby then develop symptoms, and be diagnosed an 'NAS baby', they would likely be blamed for the infant's condition. One father grappled with this 'catch 22' situation:

If we knew [the baby] ...was going to be twitching, she could have had the methadone reduced, but then again ...you can't have the methadone reduced if you weren't stable ...it's a catch 22 she was in, so ...I don't blame her, I blame the [drug treatment service]. (Mike, father)

Stories which focused on maternal drug use and 'the nature of addiction' (e.g., compliance with drug treatment, illicit drug use, recovery and 'relapse') invoked logics of care which centred on the need to address the mother's *psychopathology* (e.g., her 'motivation', decision-making, drug-taking behaviour, poor parenting, trauma, denial etc) and her *accountability* in relation to NAS. Again, contradictory discourses were evident with stories about the need to help mothers with their various psychological and behavioural problems contrasted with the need for the mother to simply demonstrate 'evidence' of 'change' and 'moving on'. This

included an emphasis on mothers ‘accepting’ that their baby had NAS (even if symptoms were ambiguous) and acknowledging ‘the damage that’s actually been done’.

[It’s] difficult for parents as well, because if they can’t take responsibility for their drug use during pregnancy, I think it can be very hard once baby is born and the guilt that they feel, to then help them to start to take some responsibility for that. (Social Worker, FG4)

We do get a few woman ...that don't acknowledge [the baby has NAS], and they will try anything else to say, oh it's feeding problems, it's not to do with NAS, and we do try and tell them it is, because it is quite important for them to acknowledge that it is. (Midwife, FG1)

### *Producing and troubling postnatal logics of care*

Discourses on ‘risk’ and ‘recovery’ relating to the postnatal period centred on two key issues which were typically intertwined: the ‘vulnerable’ infant body, potentially suffering from severe NAS symptoms, who needed to be closely observed, protected and cared for (by competent and responsible adults) and; ‘evidencing’ parenting capacity in relation to the ‘vulnerable’ baby. This elicited accounts which focused on ‘processes and procedures’ for identifying and treating NAS, and scrutinising and evaluating mother-infant caregiving. Intensive ‘monitoring’ (e.g., observing and ‘scoring’ the baby, surveillance of the mother) were taken for granted aspects of care, as was the need for admission to the Neonatal Unit should the infant display NAS symptoms. However, views and experiences of this ‘accepted’ model of care were not always consistent or compatible. For example, some parents reported feeling marginalised and had no prior knowledge of the ‘NAS score chart’ and little or no involvement in ‘scoring’ the baby for symptoms of NAS in the postnatal ward.

They didn’t even tell me they were doing the test [NAS score] half the time. I just knew because ...they would fill out the wee thing [NAS chart] in front of you, but they never ever let you see it. I had to ask to see it. (Shelley, mother)

I didn’t get like, this is a NAS chart, and this is blah, blah, blah ...I didn’t get any of that. ...Craig was clueless too about it ...and he likes to know everything too. (Heather, mother)

For most parents, time in the postnatal ward was characterised as a period of ‘watchful waiting’, to see whether their baby would exhibit signs of NAS. Many portrayed their baby as vulnerable (e.g. ‘helpless’) and drew on their own embodied experiences of addiction and withdrawal, imagining these in the bodies of their baby (‘suffering’, ‘in pain’ and ‘addicted’):

You don’t know how bad they’re going to be, ‘cause you’ve sort of, withdrawn yourself in the past, and you know how bad it can get, you think, God is your baby going to be like that. Can they fight it? Will they be alright? (Liz, mother)

You don’t know if it’s [a normal baby crying], or is it rattling? ...but it was just a wee bit more than that ...because you seen it ...it was a horrible squeal ...you knew [she] was a pain ...[and] you just want to take it off them, and you can’t’ (Ryan, father)

I read all about [NAS] ...and I just know ...[our baby’s] probably nine times more likely to become an addict ...So, I need to nurture this baby, man ...because she was born an addict, she’s an addict. We’ll not be able to stop it. (Freddie, father)

Accounts of the scoring process formed part of a logic of care that served to underline the view that babies at risk of NAS are not ‘normal’ and drug-using parents are not capable of attending to their infants’ needs. Some parents echoed these concerns and revealed how they anticipated suspicions (and allegations) about inadequate parenting and engaged in practices which might ‘prove’ their innocence:

I carried on doing her feeding chart [at home] ...‘til [baby was] at least three months, just in case her weight was to drop again, and we don’t want people to say, well you’ve been neglecting your child. I’ll say, well no, ‘cause that’s what she’s been eating, so it must be a metabolism problem, so I want her checked out. (Stuart, father)

While some professionals emphasised multiple ‘increased risks’ posed by NAS, others raised questions about the whole basis on which NAS, and the care of the family as a whole, was represented, and the extent to which existing logics of care address wider issues, including broader societal views about maternal drug use:

[In the neonatal unit] we very rarely see such severe withdrawal symptoms ...that put the baby’s health at risk, and there’s ...no real evidence that it really does ...there’s no doubt these children have worse outcomes, but ...which bit of the package is that due to?, whether that’s due to the whole, sort of, messed up lifestyle, antenatal

consumption of drugs ...the diet that goes with it, and then the care that [parents] give once the child's actually home. The withdrawal is only a symptom, if you like, that this, sort of, abnormal practice of taking drugs in pregnancy has happened ...neonatal abstinence is only a little bit of the picture, isn't it. I don't think neonatal abstinence in itself, is such a big problem. (Medic, FG4)

The most significant tension between participants however, particularly between health and social care practitioners, was differing views on the concept of 'recovery' (including 'medication-assisted recovery') and what this constituted in terms of drug-taking behaviour, parenting capacity and child welfare. This tapped into the fundamental question of whether or not continued drug use (even if 'stable' on ORT) is compatible with 'good enough' parenting. For example, 'medication-assisted recovery' or ORT, based on a 'harm reduction' approach, was presented by some as acceptable and indeed desirable for parents and pregnant women, whereas reduction in consumption and 'evidence' that the mother was 'working towards abstinence' was presented as essential by others. The following exchange illustrates this tension:

We've got a mum ...and she had been using illicit [drugs], she's gone onto a methadone prescription, she was only at the beginning stages of being titrated and the social worker's demanding to know when she would be having a detox to come off!...I just felt like the social worker hadn't obviously had that education ...on harm reduction ...we do set them up to fail because we're asking them to achieve the unachievable ...[and] we're going to cause them to relapse. (Addiction Nurse, FG2).

That comes down to social work because we're evidence led, in terms of our parenting, because if we have a child at risk of significant harm we're building an evidence picture to say ...whether the child can remain in that home environment or be removed ...we're needing evidence of that and that's putting families under quite a lot of stress, because they're dealing with the addiction ...[and that] can be quite difficult, because we're looking at form filling, doing reports, doing risk assessments and categorising it ...because we ultimately need a journey, and if we're not having a journey, well, then the child is left to suffer. (Social Worker, FG2)

These accounts illustrate how contested and contradictory understandings of risk and recovery within the context of NAS are closely entwined, and serve to undermine (and

silence) logics of care, including other, alternative ways of conceptualising, articulating and enacting care.

## Discussion

This article has demonstrated how competing discourses on risk and recovery emerge in parents' and professionals' accounts of NAS. Differing notions of risk and recovery served to both compel and trouble all logics of care which govern pregnant women who use drugs and the care of the infant and mother-infant dyad in the postnatal period. Representations of NAS babies as 'vulnerable' and 'at risk' – whether actual, suspected or potential – and disputed ideas about what constitutes 'evidence' of recovery in **pregnant women and mothers who are opioid-dependent**, served to explain (and justify) risk management strategies that involved caution, intervention and control (such as increased scrutiny and surveillance of the bodies of babies and mothers). A focus on reducing risks of NAS enrolled parents and professionals into practices which served to monitor parental (maternal) drug use. Mothers were required to both 'stabilise' on prescribed opioid therapy and to articulate a desire (if not enact) reduction in dosage. At the same time, competing ideas about what recovery might mean, and the spectre of 'recovery as abstinence', meant that whatever mothers did regarding drug use in pregnancy, they were at risk of being viewed unfit and to blame for their infant's condition. The practice of seeking to maintain drug use, or even increase levels of methadone during pregnancy in order to minimise harm, rather than aiming to reduce or come off prescription drugs, goes to the heart of ideological debates between harm reduction versus abstinence as the ultimate goal of drug treatment programmes. This is especially so in relation to pregnant women, where the health and wellbeing of the baby is also at stake. The more recent translation (and attempted convergence) of these contrasting goals into 'recovery journeys' and 'recovery-orientated systems of care', proposed in many drug and family-focused



policies (Scottish Government, 2013) denies the real tensions inherent in differing attitudes towards ongoing drug use during pregnancy and different drug treatment approaches for pregnant women. For example, within the context of pregnancy and parenting, the notion of ‘medication-assisted recovery’ (Strang, 2012), can jar with child welfare policies which seek to promote ‘drug free childhoods’ (U.S. Department of Justice and Education, 2017); and studies involving drug-dependent parents demonstrate how the meaning of recovery is contested within the context of parenthood (Radcliffe, 2011).

Our research has significant implications for current practices of care oriented towards supporting families whose babies are at risk of NAS. Treatment and care approaches which advocate intensive and intrusive interventions and in-patient care are extremely costly with little or no evidence of significant benefit to the baby or mother-infant dyad, either in the short or longer-term (Knopf, 2016). Our findings lead us to question the logics of care that such approaches entail. We propose a radical rethink in research, policies and practices around women who use drugs whereby existing logics of care themselves become the focus of inquiry (rather than the bodies of mothers and babies). Instead, we suggest a greater emphasis on identification and evaluation of systems where supportive caregiving environments for families and strengths-based approaches are possible (instead of a focus on parental drug use, deficits, risk and responsibility). This approach would require a shift away from the current focus on (addicted) maternal bodies and (vulnerable) neonatal bodies, looking more broadly at social, economic, moral, discursive and relational contexts which produce and govern such bodies.

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**Tables (1-3)**

Title of paper: Problematisation and regulation: bodies, risk, and recovery within the context of Neonatal Abstinence Syndrome.

**Table 1: Symptoms of severe NAS**

Central Nervous system	<ul style="list-style-type: none"> <li>Irritability (high-pitched/excessive crying)</li> <li>Increased wakefulness/sleep disturbance</li> <li>Tight muscle tone</li> <li>Hyperactive reflexes</li> <li>Excoriations of skin from excessive movements</li> <li>Frequent yawning and sneezing</li> <li>Rarely seizures</li> </ul>
Autonomic nervous system	<ul style="list-style-type: none"> <li>Hypersensitivity to stimuli</li> <li>Tremors</li> <li>Fever</li> <li>Increased sweating</li> <li>Stuffy nose</li> <li>Mottling</li> <li>Unstable temperature</li> </ul>
Gastrointestinal system	<ul style="list-style-type: none"> <li>Poor feeding</li> <li>Uncoordinated suck reflex/constant sucking</li> <li>Vomiting</li> <li>Diarrhoea</li> <li>Dehydration</li> <li>Poor weight gain or weight loss</li> </ul>

**Table 2: Profile of parents in study**

<b>Pseudonym</b>	<b>Age</b>	<b>Family</b>	<b>Drug use/history</b>
Joanne	34	Mike's partner. Older child/ren in foster care	Methadone prescription History of heroin and alcohol use
Mike	41	Joanne's partner. Older child/ren living with ex-partner	Methadone prescription Hx Heroin
Hayley	23	Liam's partner. First child.	Dihydrocodeine prescription Hx Heroin
Liam	34	Hayley's partner. Older child/ren living with ex-partner	Dihydrocodeine prescription Hx Heroin and alcohol use
Liz	35	Single mother. Older child/ren at home	Methadone prescription Hx Heroin
Kelly	36	Single mother. Older child/ren living at home and in kinship care	Methadone prescription Hx Heroin
Heather	40	Craig's partner. Older child/ren in kinship care	Methadone prescription Hx Benzodiazepine use
Craig	40	Heather's partner. Older child/ren in kinship care	Methadone prescription Hx Heroin
Shelley	35	Ryan's partner. Older child/ren living at home	Buprenorphine prescription Hx Heroin
Ryan	36	Shelley's partner. Older child/ren living with partner and ex-partner	Methadone prescription Hx Heroin
Carla	31	Miles' partner. Older child/ren in kinship care	Methadone and diazepam prescription Hx Heroin
Miles	32	Carla's partner. First child	Abstinent No history of drug use reported
Eilidh	28	Stuart's partner. Older child/ren with ex-partner	Methadone and diazepam prescription Hx Heroin, Gabapentin,
Stuart	38	Eilidh's partner. Older child/ren with ex-partner	Methadone prescription Hx Heroin
Morven	34	Freddie's partner. Older child/ren in kinship care and with ex-partner	Methadone prescription Hx Heroin
Freddie	47	Morven's partner. Older child/ren with ex-partner	Abstinent Hx Heroin



**Table 3: Practitioners in focus groups**

<p><b>FG01</b>  Midwife (Community)  Neonatal Nurse  Neonatal Nurse  Addiction Nurse  Addiction Nurse  General Practitioner  Health Visitor</p>	<p><b>FG02</b>  Social Worker  Social Worker  Midwife (Community)  Health Visitor  Addiction Nurse  Addiction Nurse</p>
<p><b>FG03</b>  Social Worker  Social Worker  Early Years Worker  Addiction Nurse  Health Visitor</p>	<p><b>FG04</b>  Foster Care Social Worker  Midwife (Postnatal)  Midwife (Postnatal)  Neonatal Nurse  Health Visitor  Addiction Nurse  Neonatologist  Obstetrician  Addiction Psychiatrist</p>