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Nil nocere: doing no harm as an important guiding principle within maternity care

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The practice of maternity care today is awash with traditions, recommendations and guidelines which promote the 'doing' of a plethora of things to pregnant and birthing women and their babies, often on a routine, population-wide basis. The last few decades have seen a proliferation of screening tests, prophylactic measures and interventions. Within the mainstream maternity services, these have often been introduced alongside cuts and constraints which have reduced the amount of time that a woman and her caregiver are able to spend having individualised discussions. This has had a significant impact upon the experiences of both providers and recipients of care and has been criticised by many as being unaligned with the traditional definition of midwifery as 'being with' women (Hunter 2004, Deery 2010).

In this article, we explore the principle of doing no harm; consider the history and definition of this concept; locate the issues in relation to the different paradigms that exist within maternity care; and briefly investigate the way that this term is used in the literature. We discuss a small number of interventions that remain in common use despite evidence that they are harmful and conclude by proposing that there are significant benefits to be gained by giving this principle more prominence in maternity care.

From *primum non nocere* to *nil nocere*

The principle of *primum non nocere*, or 'first, do no harm', is widely attributed to Hippocrates and cited as forming a crucial element of the Hippocratic oath. Analysis of this principle reveals a degree of linguistic and semantic complexity and, while it is not our intention to offer an in-depth analysis of the ethical or philosophical basis of this concept, it is nonetheless important to briefly clarify our position in relation to this. The relevant phrase within the Hippocratic oath translates as, '*to abstain from doing harm*' and Gillon (1985) highlights a number of issues raised by a careful consideration of Hippocrates' writings and the subsequent translation of his words within the context of medical ethics:

'...the obscure literal translation of the relevant passage is simply: "To practise about diseases two: to help or not to harm"; and in the standard English translation Jenson (1977) has "As to diseases make a habit of two things – to help, or, at least, to do no harm." A third possible source is a translation of the Epidemics by Galen, but he attached the "above all" to helping rather than to avoiding harm.' (Gillon 1985:130).

The main issue that these analyses raise is that, in practice, equal weight needs to be placed on the concept of doing good (beneficience) as on doing no harm (non-maleficience). We agree with this and, as such, have chosen to use the term *nil nocere* in order to make it clear that we are discussing the concept of doing no harm as a principle rather than as overarching dogma. As a principle, however, we would argue that the concept of doing no harm warrants more attention than

it currently receives in the care of childbearing women.

Harm, agency and viewpoint

Much of the work which discusses the principle of doing no harm in relation to health care practice and ethics has looked at this in relation to the practice of Western medical care in a context where disease exists. One of Gillon's (1985) arguments concerns the question of acceptable risk; for instance, '*a patient with Hodgkin's disease may have to undergo exceedingly unpleasant risks, including perhaps sterility, to have a reasonable chance of survival*.' (p 131). Pregnancy, of course, is not a disease state and, while some women do experience significant health issues during the childbearing year, we take the position held by many midwives that pregnancy and childbirth should be considered to be normal, physiological processes unless a problem presents. It is because no problem exists in the vast majority of cases that the principle of *nil nocere* is at least as – if not more – important in the care of pregnant women as in situations where disease exists and the emphasis is upon diagnosis and treatment. The idiom 'if it ain't broke, don't fix it' may not be the most erudite of phrases, but it effectively contains the maxim that not only is it pointless to try to improve upon a system that already works well; the interference itself may be harmful and/or lead to unwanted knock-on effects or further harms.

It has long been understood that those involved in maternity care do not all share the same ideological viewpoint and we feel it is important to be open and clear about our position. We are both home birth midwives who practise in a holistic manner, tending not to intervene unless we perceive that harm may occur if we do not. As Kloosterman (1982) also argued, it is our perception that nature cannot usually be improved upon and intervention without good cause can be harmful to both the woman and baby. However, we consider women's agency to be paramount and fully support all women to make the choices that are right for them, whether or not these are choices that we are personally able to facilitate (which means that, on occasion, we may need to help a pregnant women find another midwife) and whether or not they are the choices that we might make if we were in their situation. This is also seen to be integral to the principle of *nil nocere*; both Jenson (1977) and Gillon (1985) stress that an important component of this principle is that individual autonomy needs to be respected, particularly in situations where a person may want to choose a course of action that is deemed by another as either not ideal or as potentially harmful.

In practice, maternity care providers often disagree about what constitutes harm. We work alongside colleagues who have different beliefs; some of these see safety in routine intervention and are fearful of what they perceive to be the potential harms of out-of-hospital birth. We attend many women who, as Edwards (2005) also described, have a very different view about what constitutes security and safety from that held within mainstream maternity services. Recently, one of us had a conversation with an obstetric colleague who expressed concern that some women were declining to have an early ultrasound scan to determine gestational age. He remarked that this (declining of an early scan) did not need to happen, because it was, '*all in the way you say it*'. He went on to explain that a woman will do anything to prevent harm to her baby, and it was clear that he believed that a responsible, evidence-based practitioner would (a) consider a dating scan to be imperative and (b) use whatever means necessary, including reference to the potential harm that may be caused to the baby of not having a scan, in order to persuade a woman to consent to this procedure.

We could not disagree more; not only with his perception that dating scans are unequivocally beneficial, but with the idea that it is the duty of a responsible practitioner to coerce women into accepting the interventions that they perceive to be beneficial and/or preventative of harm. Like many of our colleagues, we have been involved in birth and midwifery long enough to have seen many changes and developments in knowledge, to have experienced situations which have challenged the foundations of aspects of our knowledge and to have heard (and told) enough stories to know that, as Polanyi (1973) argued, '*truth and knowledge are individual, personal, fluid and relative*'. We have a great deal of respect for the uncertainty that characterises many situations and decisions and for the fact that we cannot know the value of a particular choice or outcome for another woman. We also believe it is entirely possible that individual practitioners can own their own biases and practice preferences while still promoting women's agency. However, the authoritative nature of the technocratic approach to birth has led to an overemphasis on the tools and techniques of this method, often without good evidence. Risk management has become a guiding force in maternity care and routine intervention is the norm in most areas (Wagner 2006, Jordan & Murphy 2009, Wickham 2009). Claims that such an approach reduces risk and leads to better outcomes are not supported by the evidence (Tew 1986, Wagner 2006, Banks 2010) and an increasing number of midwives are calling for a return to an approach which prioritises the needs and context of individual women and is based on sound thinking and knowledge rather than tradition, belief and accepted practice.

A further guiding force in maternity care today is that of evidence-based practice, yet we seem to have forgotten that, while Archie Cochrane and other proponents of evidence-based practice made a clear case for prioritising questions around the effectiveness and efficacy of the interventions used in Western medicine, they did not suggest that the value of interventions in affecting clinical outcomes was more important than the safety of those interventions to women and babies. Indeed, when the first *Guide to effective care in pregnancy and childbirth* (Enkin *et al* 1989) was published, it included lists of interventions that were not supported by the evidence and/or which may be harmful. Over time, this principle seems to have been forgotten, and we would again argue that it is high time to

revisit the notion of doing no harm in the service of women and babies.

Types and dimensions of harm

Harm – which is generally defined in relation to terms such as trauma, injury, hurt or damage – may occur in a number of dimensions. Trauma can be physical or psychological; an experience or occurrence may have social, spiritual, cognitive, emotional or ideological effects, and these may be immediately apparent or they may occur much later. To look at some of the extremes within this range of possibilities we might contrast the experience of the woman who develops bacterial meningitis following infection of an epidural site or of the baby who becomes distressed after her mother is given an oxytocic drug with the stories we have both heard from women (some of whom gave birth many years ago) who still feel emotional pain when they think about the harsh words that someone spoke to them during their labour. Harm may be caused by the knowledge gained from screening tests. Wickham (2009) and Ahman *et al* (2010) found that women were shocked by the unexpected and sometimes unwanted information that they were given about being 'at risk' after what they perceived as routine ultrasound examination, and concluded that this could have long lasting and potentially harmful effects on the pregnancy.

Harm may occur to the woman, the baby, or both. In some cases, harm may also occur to others. We are aware of situations where other people, such as the woman's partner, have been emotionally traumatised, and we feel this is an enormously important yet neglected issue, but unfortunately do not have the space to discuss this further here. Birth-related choices can also affect future experiences and people; the woman who chooses an attendant who is quick to recommend caesarean section may find that this affects the choices that she is able to make for herself and her future babies and, in another example, if a woman declines anti-D and becomes isoimmunised, this may cause harm to a rhesus positive baby that she becomes pregnant with in the future. The complexity of this topic is compounded by the fact that, in many cases, a specific intervention may carry one set of potential harms while non-intervention carries another.

The question of the visibility of harm is worthy of deeper attention. The focus that Western medicine has long placed on the physical dimensions of being, renders this the most well researched and best understood kind of harm, although, somewhat paradoxically, this does not mean that women are fully aware of the potential harms of different choices, for a variety of reasons. There may be a greater emphasis in some arenas on the efficacy of an intervention than on the potential harms. In many cases, interventions have not been fully evaluated, while in others there is plenty of evidence of potential harm, yet their use continues. Sometimes, this is because a population-level view has been taken that the benefits of an intervention outweigh some known harm, yet this flies in the face of the need to facilitate individual choice, and respect women's autonomy. This situation is compounded by the fact that the randomised controlled trial (RCT), which is unequivocally the best way of determining the efficacy (or effectiveness) of an intervention on a population basis, is not necessarily the best tool to assess the potential harm of an intervention. Neither is this the primary goal of such studies. RCTs are quantitative in nature, and therefore they cannot easily measure the more qualitative or subjective aspects of an experience. In addition, studies – often for economic reasons – focus on short term outcomes rather than long term effects.

As Baron (1996) noted, it is possible to do harm either by act or omission. One of the best examples of potential harm by omission is the 'experiment' undertaken by Herb Green at the Auckland National Women's Hospital from 1966 onwards (McCredie *et al* 2010). Women with abnormal cervical smears, who would normally have been offered treatment, were neither treated nor told of their abnormal test results because of Green's view that cervical dysplasia did not always progress to cervical cancer. Once this was uncovered, a Committee of Inquiry was set up (Cartwright 1988) and the resulting media and public attention changed the face of women's health and maternity care in New Zealand. The issues involved in this situation are complex and many ethical questions are still under debate. A prevailing view is that this experiment was ethically and professionally indefensible, yet it is important not to forget that cervical treatment can also cause harm, as a more recent Auckland study showed (Sadler *et al* 2004). The overarching theme may be that these are choices that can only be made by individuals within their own context.

Nil nocere in the literature

We carried out a search of the MIDIRS Reference Database using the terms '*nil nocere*', '*non nocere*' and '*do no harm*' in order to get a 'quick and dirty' picture of the recent maternity care related literature in which these phrases have been used. After excluding different versions of the same book chapter, we found 27 separate occurrences of these terms in articles, book chapters and conference presentations.

The range and scope of topics that have been discussed in relation to this term is fascinating and includes theoretical discussions and debates about this concept (Martens 2002, ACOG 2007) and its application in specific instances, such as the choice between VBAC and caesarean section (Summers 2004, King 2010). A number of the writers who used this term in the title of their article considered the ethical dilemmas that this principle raises in specific practice scenarios, for example in relation to intimate partner violence (Cook & Dickens 2009), treating Jehovah's Witnesses who decline blood transfusion (Gyamfi *et al* 2003) and newborn screening (Wilcken 2003). We also found case studies and discussions of harm which had occurred during episodes of care, including a baby whose foot became swollen after a name band was fitted too tightly (McErlane 2005) and a description of a situation where a woman had a fatal reaction to ergometrine maleate and whose author argued that obstetric use of this drug was a violation of the principle of *nil nocere* (Rigrose 1962).

The largest group of articles urged caution about specific and individual interventions, including herbal supplements for babies (Marcus & Snodgrass 2005) neonatal antifungal prophylaxis (Benjamin 2008), caesarean section for breech presentation (Evans 2007), ultrasound in pregnancy (Steinhorn 1998) and early cord clamping (Mercer *et al* 2008). What struck us more than anything about this body of literature was the fact that, while the range of topics covered was vast, the majority of the articles were discussing one specific aspect of care. While we are going to continue this trend in the next section by discussing specific examples of interventions that warrant being challenged on the grounds of harm, we will then return to the wider issues.

Challenging interventions

There are many maternity care interventions that warrant challenging on the grounds of potential harm; below, we briefly discuss four which are in common use.

Directed pushing (the Valsalva manoeuvre) has been shown to be harmful to both women and babies. Bosomworth & Bettany-Saltikov's (2006) review of ten studies showed that, while evidence of benefit varied, directed pushing led to significantly poorer outcomes in terms of severity and frequency of perineal tears and concluded that there is some evidence to suggest that this may also cause late decelerations. Bloom *et al* (2006), who were among those who found a benefit in that coached pushing shortened labour, concluded that this '*confers no other benefits and withholding such coaching is not harmful*' (p 10). More recent research by Yildirim & Kizilkaya Beji (2008) found the second stage of labour and duration of the expulsion phase to be significantly longer with Valsalva-type pushing and the babies in their study fared less well with this compared to spontaneous pushing, with higher Apgar scores at one and five minutes and higher umbilical cord pH and pO^2 levels. From a maternal perspective, awaiting instinctive pushing reduces the incidence of urinary system, pelvic floor and perineal trauma (Martin 2009).

Prophylactic antibiotics for maternal group B strep colonisation have been shown to be ineffective by Cochrane reviewers (Ohlsson & Shah 2009) and an intravenous line can impact women's ability to move in labour, which may lead to further interventions that carry additional potential harms (Wickham 2003). Cohain (2010) lists a number of other potential harms, including antibiotic resistance and the potential for antibiotics given in pregnancy to cause allergies and asthma in babies. She also cites data showing that babies who culture positive for group B streptococcus (GBS) and whose mothers received antibiotics are significantly more likely to exhibit signs of respiratory distress than babies who culture positive for GBS but whose mothers did not have antibiotics. Midwives have questioned whether harm may be caused to a baby who is not colonised with his mother's gut flora; to date, we can find no research that has considered this question.

Active management of the third stage of labour is an intervention whose benefits in relation to reduction of postpartum haemorrhage are much touted yet also disputed. Both the issues and harms related to this area are complex, as this is a set of interventions rather than a single one. Uterotonic drugs are powerful agents which, while life saving on occasion, may cause harms including maternal side effects such as raised blood pressure, pyrexia and shivering (Hofmeyr *et al* 2001, Begley *et al* 2010). Controlled cord traction can cause retained placenta and lead to secondary bleeding (Begley *et al* 2010) and uterine inversion (Inch 1989). Early cord clamping has recently received a lot of attention in the literature and, as some organisations recommend managed third stage without early cord clamping we have dealt with it separately in the next point. In addition, both the latest update of the Cochrane review (Begley *et al* 2010) and recent research from New Zealand – which shows that, in low tech settings with midwives in attendance, physiological third stage results in less blood loss than active management (Dixon *et al* 2009) – have challenged current practice on grounds of efficacy as well as the potential harm of intervention.

Early cord clamping, which may be an element of active third stage management, has long been shown to result in lower neonatal blood volume (Yao *et al* 1969). Recent research has confirmed that it can also result in lower blood and iron stores, increased likelihood of intraventricular haemorrhage and fewer stem cells (Mercer & Erikson-Owens 2010) as well as being a possible cause of increased maternal bleeding (Dunn *et al* 1966). Babies who experience early cord clamping are more likely to require oxygen, ventilation and blood transfusions and are more likely to suffer from respiratory distress and sepsis. Such perinatal insults may precede cognitive impairment in children at eight years (Mercer & Bewley 2009, Odd *et al* 2009), while the positive aspects of leaving the cord intact also include benefits in relation to bonding (Schmid 2005) and increased length of early breastfeeding (Mercer 2001).

We could mention many others, but probably do not need to. Our point is not so much about whether specific interventions can cause harm, because all interventions can cause harm just as, in some situations, non-action can be more harmful. It is, again, more about whether the time has come for the concept of *nil nocere* to be given greater prominence not simply as a term to be used when raising issues about a specific intervention or drug, but as a principle that underpins maternity care.

The scale of the problem

Many of the interventions in use today were introduced when our knowledge of birth was very different. It is only relatively recently that it has been acknowledged that babies can feel pain and, not many decades before that, the uterus was thought to roam a woman's body. So much of the research and analysis that is undertaken today is being carried out within the framework of existing ideology, custom and practice, and it is interesting but also disheartening to note that the interventions which have become obsolete in maternity care are so few that most practitioners could quickly

list the well known ones – perineal shaving, enemas, routine episiotomy, thalidomide, and diethylstilboestrol. A 1993 survey of Canadian hospitals found that many continued to routinely use interventions that had been shown to be unnecessary and/or potentially harmful (Kaczorowski *et al* 1998). Little has changed: in 2010, Daviss *et al* showed that Canadian hospitals were almost five times more likely to require caesarean section for babies in a breech presentation when the now discredited Term Breech Trial (Hannah *et al* 2000) suggested that it decreased risk for the neonate, than they were to reintroduce the option of vaginal breech delivery when the findings of this study were overturned.

After noting this phenomenon in a number of areas of medicine, Rous (2010) carried out a small analysis of a portion of the relevant literature, considering why particular interventions become obsolete. Often, more than one factor was involved, but our reading of this paper showed that the only examples of maternity-related interventions that became obsolete principally because they were potentially harmful were pharmaceutical drugs. Where this happened, it was generally either the case that the harm eventually became too great to ignore (eg stilboestrol) or that other alternatives became available. Rous (2010) argues that negative trial data was rarely seen as sufficient reason for the discontinuation of an intervention and suggested that, among other strategies which include the dissemination of evidence, the use of marginally effective therapies would be better controlled by promoting alternative and more effective rival interventions. Once an intervention has been introduced, it would seem that, while it may one day be replaced by a 'better' intervention, it is rare that a decision is made that non-intervention is, after all, preferable.

We read study upon study in these pages and those of other midwifery journals that challenge elements of practice and care, often detailing the history of particular interventions and showing how they were introduced in a particular context that may have no relevance to the experience of women and babies today. We talk to midwives, doctors and others around the world who are attempting to challenge specific practices or routine intervention in general. Often, even where they can show that something is potentially harmful, they are not successful in removing an intervention from the ever-growing list of those that are routinely recommended to women and their babies. No one ever had to prove that physiology worked before the advent of these interventions, and yet there seems to be a growing overemphasis on the potential (short term) benefits of intervention with little attention paid to the harm they may cause. At the very least, women should be offered full information giving both sides of the picture.

In tandem, we see more and more interventions, tests and recommendations being introduced without real forethought about what the long term effects may be, or how these may affect the bigger picture. A classic example is the statement recently made by the British Dental Association (2010) who, while acknowledging that the evidence is inconclusive, is nonetheless advising against on-demand noctural feeding during weaning (which they state should occur at six months of age) in order to avoid milk being left in the child's mouth while asleep lest it cause tooth decay. We understand the benefits of breastfeeding to be innumerable and this recommendation has focused on the single and unconfirmed possible harm of dental caries without considering the downside, or potential harm, that may result in other dimensions if women follow this advice.

Conclusion

The recent history of birth has led us to a situation where practice is characterised by the routine application of many forms of intervention and, even where the effectiveness of these come into dispute or evidence of harm emerges, there is a tendency for their use to continue. Many of the documents detailing maternity care policy acknowledge the importance of promoting and protecting choice for women, yet the default position in many areas would seem to be to monitor and intervene as much as possible on a population basis rather than in accordance with individual need and after a careful balancing of the risks as well as the benefits. Have we forgotten that the human race continued quite successfully for millennia before the advent of modern medicine, and that the goal of intervention is to treat problems and prevent harm rather than causing it?

It is important to note that we are not arguing for the wholesale removal of intervention. When the women in our care bleed, we are very grateful that we carry syntocinon, and when babies are truly unable to be born vaginally, we are always happy that our obstetric colleagues can (literally) help them out with caesarean sections. However, intervention would appear to have become the order of the day despite ever increasing evidence that this can do more harm than good. While we welcome the continued challenging of individual and specific interventions, we propose that it would also be useful to resume the project that Enkin *et al* (1989) began; categorising interventions according to potential benefit and harm. Ultimately, the wealth of evidence showing the potential harm that can be caused by intervention demands to be addressed via consideration of the overall approach that we are taking, and the question of whether this is improving or detracting from the well-being of women and babies. We would argue that the principle of *nil nocere* is a fundamental tenet which should be an essential element of such questioning and thus given the prominence that Hippocrates afforded it.

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Nil nocere is also the name of a project based on the West Coast of the South Island of New Zealand which seeks to create, nurture, promote and protect initiatives aligned with a community-centred and holistic approach to childbirth. The authors' fee for this article is being donated to this project, which has a website under construction at www.nilnocere.org.nz