Is there something wrong?: NHS Direct Nurse practice in helping parents cope with crying babies.

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Dedication

To Michael and Rosie

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ABSTRACT

Since the late 1990s there has been an increasing focus on parenting ability, support and education which is reflected in policy, practice and research in the UK. This research analyses how nurses might intervene to provide this support, specifically in relation to crying baby and the role of nurses at NHS direct. It involves collection and analysis of data from NHS Direct call data in 2002, and solo focus group data in 2006. Within the wider tradition of grounded theory, the methodology includes use of discourse and thematic analytical approaches. The research analyses the means by which NHS Direct nurses make different use of the algorithms and organisational protocols to make decisions and give advice to parents with crying babies, how their clinical knowledge and experience influences these decisions, and how nurses explore parents' ability to cope. This is seen within the organisational context of NHS Direct, a 24 hour government funded telephone service described as both a triage service and an advice/helpline service.

Findings from the study indicate a degree of tension between the essentially humanistic nursing culture and the highly scripted, protocol driven rules based system that underpins NHS Direct. Despite this tension, nurses will sometimes combine their knowledge with that of the algorithm where the call is involved with eliminating emergencies. The same synthesis of knowledge is not apparent with the knowledge contained in the algorithm regarding non-medical, non-emergency, value-sensitive issues relating to parental coping with excessive infant crying. Findings suggest that NHS Direct nurses use the 'crying baby' algorithm differently and this variance is influenced by experience and familiarity with the algorithm. Adherence to the algorithm is perceived by nurses as safe in relation to the medical questions which exclude emergencies. The non-medical elements of the algorithm, which include prompting the nurse to ask about parent coping ability and the possibility of shaking their child, are treated differently and

it is considered safe to not ask, or ask around the question and to not offer the advice prompted by the decision aid software. The algorithm prompt to assess parental coping ability is rarely successful in encouraging the nurse to do so overtly.

From these findings, consideration might be given to enhancing nurses' knowledge, skills and confidence, supported with appropriate supervision, to provide effective intervention in relation to value sensitive, non-medical issues such as parental coping ability and in handling the uncertainty such issues may yield. Allied to this would be establishing clarity and recognition of the inherently different, but not opposing functions of providing a triage service and an advice/ helpline service.

CHAPTER ONE: Introduction

Provision of Parental Support and the role of the NHS

There has been increasing focus within UK Government policy on universal support services for parents at different levels of intervention. This policy development includes an emphasis on maximising parental coping ability to deal with challenging behaviour patterns in children, such as excessive crying (DoH 1995, Iwaniec 2006, Barr et al 2006; Long and Johnson 2001; Showers 1992).

Within the UK, parents have access to universal service provision within the National Health Service (NHS), in particular, primary care services and remote universal provision such as NHS Direct. The support and provision of services for babies is a particular focus of the health service child health promotion programme (Hall and Elliman 2003). The core programme recommends intervention from GPs, midwives, health visitors and school nurses throughout childhood. The first year of a child's life is the focus of most intervention particularly around screening and detecting developmental problems. In addition to this, these interventions potentially present opportunities for parents to discuss issues relating to responding and coping with their child's challenging behaviour patterns such as persistent crying.

Professional intervention that has been found to help parents cope with crying include structural behaviour management (Gillies 1987); supporting parents through the problem as opposed to focusing on seeking means to solve it (Long and Johnson 2001) and provision of reassurance (Boddy et al 2005). However, it is apparent from research that the same parent, on different occasions, may need different types of support and advice for the same problem (Miller and Sambell 2003). The nature of support and advice required is a decision to be taken by the individual practitioner following assessment. Depending on the culture and nature of the profession to which the practitioner belongs, the means

by which assessment is achieved is likely to differ. The health professionals frequently involved in providing parenting support in relation to crying are nurses (health visitors), midwives and GPs. Whereas, nurses and midwives traditionally adopt a holistic patient-centred means of assessment of care needs (Hanlon et al 2005; Kelly and Symond 2003), the culture of the medical profession is bound more closely to the more scientific hypothetico-deductive strategy of differential diagnosis as a means of identifying the problem and assessing risk in identifying a possible cure (White and Stancombe 2003; Strauss et al 1997; Kelly and Symond 2003). Both methods of assessment, however, will yield different outcomes depending on the practitioners' expertise, experience, professional and tacit knowledge.

The hypothetico-deductive means of assessment lends itself to algorithmic based computer support technology. The appeal of using a computerised means of decision-making includes the potential to provide more consistent assessments and decisions, the result of which may also result in fewer mistakes being made. Within the policy context of New Labour's 'modernisation agenda' of the late 1990s, this has had particular relevance and has been pursued in the creation of NHS Direct.

Although the nature of computerised decision aid software is more akin to the medical model, it is not an alien concept to the nursing profession for whom triage in some clinical areas, notably 'accident and emergency' (A&E), is common practice. Edwards (1994) provides a useful background to the term triage in recalling its genesis during World War One in prioritising the care of unprecedented numbers of casualties en mass, and in clarifying a definition as: "… to sort, to choose, to classify" (pg 717). Iserson and Moscop (2007) put the first formal battlefield triage earlier than this attributing it to Napoleon's Chief Surgeon, who applied clear rules for prioritising those who needed treatment - the dangerously wounded would be treated first, regardless of rank. It is interesting to note that the First World War system prioritised the less seriously

wounded so that they could be returned to the front line. This emphasises the crucial point that it is the purpose of the system, rather than the system itself, that is of strategic importance and relevance.

Edwards (1994) goes on to describe the adaptation of triage in A&E settings where patients are assessed on arrival, the level of urgency of their presenting complaint determined and direction given to the patient regarding the appropriate level of health care.

These principles form the basis of telephone nurse triage service provision, the largest provider of which is NHS Direct. The use of telephone helplines as a universal means of supporting parents has been Government driven and some studies have been carried out in relation to voluntary sector provision (Boddy et al 2005). However, the nature of the support given to a parent from the Government funded telephone triage service like NHS Direct, remains a thinly researched area.

NHS Direct

NHS Direct is a national telephone triage service which provides healthcare information and advice to the public in England and Wales via a single national number. Plans for NHS Direct were first outlined in "The New NHS – modern, dependable" (DH 1997) which stated that its remit was:

> "to provide easier and faster advice and information for people about health, illness and the NHS so that they are better able to care for themselves and their families".

NHS Direct is described variously as being both a telephone triage service (Monaghan et al 2003; Greatbach et al 2005) and a helpline/advice line (National Audit Office 2002; DH 1997, Hanlon et al 2005). Thus the functions of the service revolve around the need to sort, choose and classify as per Edwards

(1994) description of triage, and to provide easy and fast health advice and information (National Audit Office 2002). In addition to providing a national telephone based service, NHS Direct also provides an associated on-line service and, since 2004, a digital television based service. NHS Direct was launched as a twenty four hours a day, seven days a week service in 1998 and was intended to facilitate better access to NHS services and out-of-hours services (National Audit Office 2002). Visitors to the NHS Direct website are informed that it provides confidential information on:

> "What to do if you or your family are feeling ill; Particular health conditions; Local healthcare services, such as doctors, dentists or late night opening pharmacies; Self help and support organisations"

It has been described as the world's largest provider of telephone healthcare advice (National Audit Office 2002).

Parents with persistently crying babies are likely to seek advice and support. Long and Johnson (2001) powerfully depict the level of disruption a baby's excessive crying can cause in families and focus on the role of the health visitor as the professional best placed to meet the parents' needs. However, some parents may choose to call NHS Direct. Discussion about how parents with persistently crying babies are supported by nurses at NHS Direct is complicated by how the business of NHS Direct is labelled, advertised and understood both by policy makers, the public and the organisation itself. From a purely triage perspective, the nature of decision-making, assessment and intervention that occurs will differ from that of supporting parents through their problem. In the same way, a parent would receive a different service attending A&E with a crying baby who is not ill than they would when receiving a call from a health visitor to discuss the same problem. The degree of impact which nurses' level of expertise, professional background and tacit knowledge has on the assessment process will also vary depending on the situational context. The nature and understanding of safety may also differ. In a triage situation, eliminating

emergencies and providing a signpost to other services whilst giving some immediate advice is likely to carry a different threshold of concern to the nurse who aims to maximise parental coping ability and assesses the potential for building frustration and anger and the non-medical risks that may present to the child.

What has become apparent through this research is that there is a different use of NHS Direct systems and processes which could, in some cases, potentially best fit a triage service and in others, a helpline. I will be making reference to this throughout this thesis.

Why NHS Direct and Crying Baby?

The genesis of my research journey was an interest in nurse intervention to help parents cope with the demands of a crying baby. As part of the early study stages involving the examination of different routes where parents might present to seek advice about this, I collected data from NHS Direct. The uncontaminated nature of the data (in the form of audio taped calls), and the particular operational business of providing healthcare information and advice over the telephone using computerised decision-aid software whilst maintaining accountability and responsibility for nursing decisions, became particularly absorbing. Added to this was the scarcity of research concerned with NHS Direct, at the time. I, therefore, made the decision to concentrate on NHS Direct as my data source. Within this study the issue of nurse intervention to help parents cope with crying baby can be seen at once as a subject in its own right, and also as an exemplar of how non-medical, non-emergency problems are handled at NHS Direct.

The Rationale

This thesis aims to investigate how nurses at NHS Direct make use of the algorithms and organisational protocols to make decisions and give advice to parents with persistently crying babies and how this, and their interaction with callers, is affected by experience and knowledge. In particular, I am interested in

how nurses at NHS Direct approach questions about parent's ability to cope and the techniques used to enhance parental coping ability, crystallised in the question that explores how near parents are to shaking their baby which I have referred to as the 'coping question'. Within this, how various themes, identified in other parallel research, enhances the understanding of how the business of NHS Direct is achieved, will be drawn upon taking into consideration the implicit dual function of triage and helpline. Research that has been carried out in relation to telephone counselling and advice giving, e.g Silverman (1997), Heritage and Sefi (1992), and also in relation to emergency call centres for example, Zimmerman (1992), are particularly instructive. However, although NHS Direct business contains elements of both, it is neither of these interventions. I am, therefore, also interested to see if new categories and different ways of trying to achieve the work are established, particularly in the light of the central role played by the use of information technology and the hypothetico-deductive strategy which is embedded within the organisation's algorithm.

The Aims

This study aims to contribute to our understanding of contemporary changes in policy and practice by exploring nursing practice in the arena of telephone triage/advice/helplines and by doing so, provide an insight into the role and how it relates to official guidance and protocols. The findings will add to the current and emerging discussions, occurring within the field of health and social care and in the field of information technology, about the use of algorithms in response to socially interactive phenomenon and the practice of telephone triage and advice giving and will add to the body of knowledge about the effectiveness and potential for this service provision.

Specifically, it is intended that the following research questions are addressed:

- How do nurses at NHS Direct use their clinical judgement and practice to manipulate and make different use of the evidence embedded within the crying baby algorithm.
- How does this impact on nurse/caller interaction?
- How is telephone advice given to parents ringing for advice regarding persistently crying babies.
- How is the 'coping question' embedded within the algorithm, used to assess parental coping ability
- What do nurses perceive to be their role in using the crying baby algorithm?

Thesis Outline

A brief outline of the thesis structure is given below:

Through a critical review of relevant literature, Chapter Two will draw attention to the growing professional and political interest in parenting education and support. It will examine how stress, such as the stress of a crying baby can impact on parenting ability and potential resulting parental behaviours. The literature concerning professional response to parenting stressors will be considered. Associated with this, the chapter will critically analyse the literature concerned with telephone helplines and triage with particular reference to NHS Direct, its protocols and algorithmic decision-aid software. The chapter will highlight the political context in which NHS Direct was first delivered and analyse its role in minimising risk and achieving performance measures within the context of the NHS 'modernisation' agenda, clinical governance and evidence based practice. The nature of evidence-based practice and it's applicability as a 'gold standard' within health focused social interactions will be analysed critically.

The nature of nurse/caller interaction will be explored through the literature concerned with institutional talk with particular reference to conversational strategies and advice giving. The chapter will draw together the relevant literature on the analysis of talk in different institutions. Different methods of analysing talk will be considered with particular attention being paid to methods suitable for the analysis of talk in telephone triage situations such as emergency call centres, telephone helplines and also in other advice giving situations such as counselling encounters. This critical analysis will provide a framework for the further discussion of what is considered best and most effective practice within these settings with links drawn to professional practice at NHS Direct.

The aim of Chapter Three is to guide the reader towards an understanding of the chosen methodological approach and techniques employed in this research. It explores the philosophical position in which the study is located and emphasises the broad use of grounded theory as a strategy. The chapter will highlight how, within that strategy, different types of analytical techniques are used, including those drawn from discourse analysis. Early study design phases will be introduced and links will be drawn to later data collection in terms of how the orientation of the study was influenced. The methodological approach which underpins Phase One of the study and which draws on methodology from discourse analysis will be described and discussed critically. Likewise, the use of thematic analysis utilised in Phase Two will be critically analysed. The means by which methodological rigour is ensured for each phase of the study will be discussed.

The chapter will draw on the literature and present the interpretive analytical paradigm that is used for the data analysis. The ethical issues that are prevalent within the study are presented together with an explanation of how they were addressed.

Following an introduction to two versions of the 'crying baby' algorithm, Chapter Four will present the data collection and initial analysis of the call data using the previously described analytical framework and using extracts of verbatim text to emphasise the features described. The chapter will then highlight the development of the second level of interrogation of the data and presents the resulting analysis. The analysis results from each call will be summarised and attention drawn to common features.

Through the collection and analysis of the focus group data, Chapter Five intends to provide a coherent account of the data. Emphasis will be given to the relevance of the grounded theory strategy in informing the focus group interview schedule. Results of the analysis will be presented in the form of diagrammatic presentations and in the presentation of the discourse under the themes identified. A summary of the focus group data analysis will be given.

Chapter Six will consider the findings from the study in the context of the most recent and relevant literature concerning the business of NHS Direct within the current policy and political context, including consideration of findings relating to the use and different use of the 'crying baby' algorithm and nurse/caller interaction. The nature of telephone triage generally and advice giving using an algorithmic framework and the relation to the practice of parental education and support will be a key point of focus within this chapter. Attention will also be drawn to the medical model and the social, cultural and policy contexts in which health professional judgements are made. Consideration will be given to the development of professional practice and knowledge alongside technological advancement and the balance of emphasis between medical and non-medical decisions.

The findings from the study will also be considered within the context of NHS concerns for managing safety and risk and minimising uncertainty within a scheme of clinical governance and the influence this has on professional

decision-making with a particular focus on decisions of a value-sensitive nature. The traditional accountability and responsibility that is deeply rooted within nursing practice will be considered in the context of these findings, and consideration given to the avoidance of uncertainty, particularly in child protection practice.

The implications and conclusions drawn from the study findings within the context of the specific research questions identified above will be considered at Chapter Seven. The limitations of the study will be considered and recommendations will be made for policy, practice and future research.

CHAPTER TWO: Literature Review

Introduction

This chapter brings together and reviews literature that considers factors that influence parents' ability to cope with stressful behaviours in children such as crying babies and highlights research that considers the potentially most serious consequences of parental inability to cope - violence to the child. It goes on to consider the role of health professionals to provide support and education as a means of early intervention including that of telephone triage services and in particular, NHS Direct.

The chapter is organised in terms of first exploring the development of parental education and support within the UK and locates this within a professional and national policy context. It draws attention to current understanding about the impact of persistent infant crying on parental behaviour and what is known and disputed about issues relating to parental stress, family violence, parental coping and the professional response. In particular, it highlights the services and professionals within health to whom parents may turn including NHS Direct.

The chapter then provides a background to the development of NHS Direct, including its technological foundations, protocols and targets. The chapter also presents a critical review of the recent relevant literature concerning NHS direct specifically and telephone triage more generally. A further review of the literature highlights the nature of conversation and advice giving in institutional settings, the synthesis of which informs the data analysis during the different phases of this study.

Parenting support and Education: Policy and Professional Context

Since the mid to late1990s there has been a growing interest in parent education and this decade has seen a further increase of interest in parenting as an activity,

in parent education and in parenting support (Smith 1997; Zeedyk et al 2002; Miller and Sambell 2003; Boddy et al 2005). However, as Moran et al (2004) highlight, in the UK this increase has not been matched by robust, high quality studies to evaluate them; the authors call for more randomised control trials to improve this situation which is critically discussed further in this chapter and in Chapter Six. Government policy development has driven this recent heightened interest with major child abuse enquiries often cited as the reason for the need for change. For example 'Every Child Matters' (DfES 2003) is often described as emerging from the Government response to 'The Victoria Climbie Inquiry' (Laming 2003). However, the policy drive towards parent support is much wider than concerns about preventing child abuse. Not only is it seen as important in relation to preventing future crime and ill health but also ensuring that every child can fulfil their potential.

The programmes, policy directives and initiatives that have emerged include Sure Start (1998), which was introduced as a programme that brought together early education, childcare, health and family support. 'Supporting Families' Green Paper (Home Office 1998) and Every Child Matters (DfES 2003) both highlight the need for 'signposting' parents to appropriate sources of help and support and identify a national helpline as featuring in this role (Boddy et al 2005). Other policy initiatives include 'Ten Year Childcare Strategy' (HM Treasury 2004), 'Support for Parents: the best start for children' (HM Treasury 2005) which coined the phrase 'progressive universalism' to describe how universal services are targeted to the most in need, and culminating in 2007 with 'Every Parent Matters' (DfES 2007) which sets out the government's plans:

> "…to promote both the development of services for parents as well as their involvement in shaping services for themselves and their children" (p1)

As part of the Government's 'Reaching Out: An Action Plan on Social Exclusion' (2006) initiative, ten areas in the UK have been designated pilot sites for a health-led parenting project which will test an American intensive model of parenting support through home visitation, aimed at first-time, 'at risk' parents, provided in the context of UK universal services. The basis of most current parenting interventions is in line with current Government policy in addressing early intervention and support, whether that be targeted or universal. The Children's Plan (DCSF 2007) states as one of its five principles, that more needs to be done to support parents and families in order to improve children's lives. As mentioned in Chapter One, the development of NHS Direct is an essential part of New Labour's policy priorities.

The notion that parents do not necessarily have an innate ability to parent effectively is now recognised and the need for "efficacy in parent education" has grown (Miller and Sambell 2003:33). Moran et al (2004) suggest the likely benefit in 'normalising parenting support as a universal right' as most parents need support at some point. With a particular focus on parental discipline, Redman & Taylor (2006) point to the need for health professionals to provide consistent advice about alternatives to physical punishment to parents who are seeking those alternatives. This builds on results of a study by Wade et al (2005) who studied single mothers of low-income who attended a child day care facility in the US with a specific focus on their response to infant crying. The study, though small in sample and arguably, limited generalisability, found that this group of mothers valued being taught how to cope with feelings of frustration and valued formal and informal interactions with supportive people.

Some of the first points of contact for parents experiencing problems such as a persistently crying baby, will be the health professionals who provide a twenty four hour service and as Iwaniec (2006) emphasises, parents who are faced with parenting difficulties should be provided with help when it is requested. The dangers of an inappropriate intervention are described by Dakof and Taylor

(1990) who stress that individuals who request help and do not receive it, or who receive criticism of how they are handling the situation are discouraged from seeking further help.

The problems that parents of a persistently crying baby might bring to health professionals is specifically discussed by a variety of authors. Long and Johnson (2001) highlight the evidence that those parents and carers who complain to professionals that their baby cries excessively actually do have a baby who cries more frequently and for longer than most (St. James-Roberts et al 1993; Baildam et al 1995). Barr et al (2000) confirm that babies who cry excessively will do so despite the quality and level of parenting provided and all babies have a normal crying curve which starts at 2 – 3 weeks and peaks at 5 – 6 weeks. Long and Johnson (2001) found that a baby's excessive crying can promote feelings of 'living on the edge', social isolation and 'gradual introversion' for families. They highlight the fear parents have of losing control:

> "The most significant fear for parents … was the danger of non-accidental injury to the baby. Such fears, exhaustion, and the occurrence of intermittent periods of especially heightened tension, led to a pattern of approaching and withdrawing from a point of total loss of control: living on the edge." (p 158)

If health professionals are to understand the value of their interventions aimed at helping parents cope with the stress incurred by their child's behaviours such as persistent crying, there is a need to understand the context in which that stress manifests itself, how and why it may increase, the potential outcomes that may result and what helps to increase parental coping strategies.

Parenting Behaviour and stress

Stress is seen as an especially prominent antecedent in violence towards children. Stressors include background or environmental stressors such as noisy

environments and in particular, uncontrollable noise (Straus 1980, Geen 1990). A crying baby can be described as uncontrollable and its effects on parents and caregivers can be powerful (Long & Johnson 2001; Wade et al 2005). There is disagreement about the impact that different constellations of risk factors have on parents. Burrell et al (1994) and Whipple et al (1991) purport that parents who are under stress due to physical, emotional and financial problems are at risk of engaging in the physical and emotional abuse of their children. However, Smith et al (1995) found that a combination of factors was prevalent in families where there were high levels of physical punishment. Underpinning these discussions is the proposal for a model of parenting which is based on Bronfenbrenner's (1979) ecological perspective of parenting which considers parent/child interaction and behaviour amid the context of parental characteristics, child characteristics and family environment (Belsky 1984). These factors are explicit within the ecological model of the "Framework for the Assessment of Children in Need and their Families" (DoH 2000) and have been further developed in the "Common Assessment Framework" (DfES 2006).

In ecological approaches, parenting behaviour is seen as an evolutionary process that is underpinned by the interactions between children and parents and between families and their environments (Kotchick and Forehand 2002). Related to this, family violence could be described as the interaction between three specific conditions: high level of conflict and stress; learned aggressive behaviour and a cultural norm which accepts family violence (Straus 1980). This is supported by Watkins and Cousins (2005) who draw attention to the interplay between situational context and structural context in which physical punishment of children occurs. Whether or not parents cross the line between legitimate and non-legitimate punishment seems to stem, in many cases, from a battle to cope beneath a constellation of stressors leading to frustration and anger. Berkowitz (1978) emphasises that frustration does tend to lead to aggression, but not always. He describes how a readiness to act in an aggressive manner, and

some external cue that acts as a trigger, are prerequisites for frustration to be expressed as aggression.

The effect that infant crying and other behaviours, such as poor sleeping patterns and difficulties in feeding, has on parents includes reduction in coping ability, poor parent/child interaction, reduction in self-esteem, exhaustion, frustration and anger (DoH 1995; Iwaniec 2006; Long and Johnson 2001). All of these behaviours can potentially be the trigger which, in some people, will manifest itself as frustration, then aggression (Berkowitz 1978). In addition, inconsolable infant crying can trigger a series of events that may lead some parents to shake their baby with sometimes fatal consequences (Krugman 1985; Showers 1992; Reijneveld et al 2004; Barr et al 2006). Particularly vulnerable to this trigger are men and King et al (2003), in their study of Shaken Baby Syndrome Outcomes, support previous research in identifying that 72% of the perpetrators were male. In her research concerning primary preventative interventions, Showers (1996) called for professionals from all child protection agencies to consider how to reach men in their Shaken Baby Syndrome awareness raising campaigns. In addition Ryan (2000) highlights that the importance of the role of fathers in the development of children is recognised as is the fact that fathers are "insufficiently engaged by practitioners"; she points to the need to provide a gender related response to engage with men in relation to child care and welfare issues.

Parental ability to cope with and manage the background conditions and specific stressors which may lead to violence and aggression are therefore, key to the welfare and upbringing of children. How parents cope, and what helps them to cope better, is a matter for individual assessment. In order to discuss the usefulness of interventions, it is first necessary to determine different influences on coping and resilience and the various categories under which these are defined.

Coping can be described as both a trait which exists as a stable part of a individual's personality (dispositional) or a response to a specific stressful situation (contextual) (Lazarus and Folkman 1984). Holahan, Moos and Schaefer (1996) introduce a conceptual framework which shows how both approaches have their strengths and how the combined influences shape health and well-being.

Two main types of coping have been identified: 'approach coping' and 'avoidance coping'. Approach coping is a strategy used by individuals who problem solve and who seek information in an effort to adapt to life stressors. Such individuals experience fewer psychological symptoms, and the 'approach coping' mechanism has been associated with reduced depression (Mitchell, Cronkite and Moos 1983). Symptomatic of 'avoidance coping' are denial and withdrawal and are associated with psychological distress and more depression (Endler and Parker 1990). Attempting to manage unpleasant feelings by withdrawal and denial may increase distress and create problems later on (Menaghan 1982). Which approach a parent may adopt in order to cope may determine who they approach for advice and support.

The success of any coping strategy depends on the controllability of the situation. Approach coping strategies of problem solving may lead to increased frustration and distress when used in a context where the stressor cannot be controlled and where there is no response (Folkman 1992, Compas et al 1988). Taking excessive infant crying as an example, Wolke et al (1993) found structured behavioural management to be more effective than general support while Gillies (1987) found that practical advice and support could at least improve the parents' morale and self esteem. In Long and Johnson's (2001) study, the parents eventually accepted that coping involved support *through* the problem rather than *solving* the problem (that is stopping the baby crying) which was frequently an impossible task. The need for a careful approach towards a responsive professional intervention that is rooted in evidence is, therefore, crucial.

Professional Response to Crying Baby related stressors.

In their study of parents living with excessively crying babies, Long and Johnson (2001) expressed four key areas of need to which parents required a professional response:

> " - The need for people to listen and to try to understand.
> - The need to be believed.
> - The need for someone to visit and to 'be there'.
> - The need for reassurance that the parents are not to blame and the crying will stop eventually"
>
> (pg. 159)

This is echoed by Boddy et al (2005) in their evaluation of the telephone helpline 'Parentline Plus'; parents express their need for, and appreciation of reassurance and being told they are doing the right thing by the call takers. However, users of this service do not call about 'small' problems but have a greater level of need.

There are numerous examples of approaches and interventions designed to help parents cope with infant crying. These are usually in the form of written information and leaflets. However, there is very little literature which guides professionals on effective intervention. Efforts to consider the effectiveness of a leaflet campaign in Wandsworth were beset with problems associated with convenience sampling methods (Sampson and Shepherd 1996). More robust evalutions of interventions such as that of Showers (1992) show positive outcomes of her prevention programme, but the focus of the study was on informing parents about the dangers of shaking. It included information about coping with crying, but the usefulness of this specific part of the information pack was not measured. Surprisingly, there has been no published evaluation of the effectiveness of the NSPCC leaflets or campaigns and again little guidance given to professionals as to the context in which this information should be given,

whether advice should be offered proactively as part of a primary level of intervention, or whether professionals should wait for parents to ask at the point when they are experiencing problems.

There are no studies that examine the degree of knowledge that health care professionals have in relation to the possible benefits of helping parents cope with infant crying despite the fact that, in 1991, nearly 17% of families in the UK were estimated to seek professional help with infant crying (St. James-Roberts & Halil 1991). This may be because, as Long & Johnson (2001) point out, there is little agreement in the literature about cause, treatment or prevalence of infant crying. The lack of agreement may be rooted in our understanding and perception of childhood and 'the child' which is regarded as socially constructed and depends on "… a particular culture at a particular time" (DH 1995). James and Prout (1997) describe childhood as a socially constructed 'institution' which provides "… an interpretive frame for understanding the early years of human life" (p3). Therefore, as that interpretive frame alters, so does society's acceptance of the explanation for different behaviours, such as infant crying. As the explanation for different behaviours alter, so to do the nature of requests for advice.

If parents understand that an increase in babies crying in an evening is more likely to be due to colic rather than a normal developmental phase, then their request for advice will be focused on how to deal with the colic. The nature of parents' requests and their needs and expectations from those who give advice, was explored by Miller and Sambell (2003). These authors undertook a qualitative study including seven focus groups. The description of the method is a little confusing as the authors refer to 'in-depth' and 'face-to-face interviewing' within a focus group situation when those terms are more commonly used to describe individual interview techniques. In addition, the degree to which there was agreement and disagreement within the focus groups is not made clear in the paper. However, the findings present a useful description of parents'

perspectives of parent education. The authors identified three distinct views of support and learning:

> "The dispensing model: Parent asks 'What can I do to change my child?'
> The relating model: Parent asks 'How do I feel about this situation?'
> The reflecting model: Parent asks 'Why is this happening?'" (p 36)

For each distinct model, the authors identified an 'educators' response:

- The dispensing model: Parent educators focus on the child as a problem
- The relating model: parent educators focus on the parent as a person.
- The reflecting model: parent educators focus on the relationship as a legitimate area for exploration.

Miller and Sambell emphasise that the differences in style of support and learning are not features of the parents as individuals but of the nature of their relationship and interaction with their child, within a particular situation at a particular time. From this one can recognise that one parent, on different occasions, can require all three types of support and education and it may be that, depending on the situational context, different agencies and professionals are approached for advice. How this applies to the nature of support and advice given by NHS Direct nurses is explored further in Chapter Six, but in their review of international literature, Moran et al (2004) describe the value of short interventions which deliver factual information to encourage a change in common childhood behaviours as well as the longer term interventions.

Long and Johnson (2001) focus on the health visitor as the professional best placed to meet the needs of parents with excessively crying babies and respondents in Boddy et al's (2005) study support this saying they would rather

access universal services within the community for parenting support. In addition, Boddy et al also identify how:

> "The use of telephone helplines for support with parenting is known to be low" (p 289).

However, given the identification of the 'evening peak' of infant crying (St. James-Roberts and Halil, 1991) and given that many health visitors and other universal community based services, are still offered on a predominantly 9am to 5pm, Monday to Friday basis (although this is changing), parents may choose to turn to accident and emergency departments and/or to NHS Direct for advice and support. As mentioned in Chapter One, NHS Direct is described both as telephone triage service and as a helpline/healthcare information line.

Telephone Triage/Advice

Telephone triage/advice is recognised as a complex, knowledge-intensive task involving making assessments and taking decisions in the absence of visual cues (Zimmerman 1992; Mayo 1998; Holmstrom 2007). Forms of telephone advice include telephone counselling and although the literature relating to advice given draws partly on studies focusing on telephone counselling, NHS Direct does not claim to provide this service. Bratteteig and Gregory (1999) highlight that telephone triage is not a new development since telephone encounters between nurse and physicians requiring remote assessment and advice giving, have long been practised. Arguably, however, even in those circumstances, it is likely that the nurse or physician will have known something about their caller, have access to their previous medical history, and do not have to rely entirely on the information given over the phone. As Glasper (1993) points out, telephone nurse triage is analogous to being bound and blind-folded! The growth of interest in telephone triage has increased during the last two decades both in the UK and abroad (Markland et al (2007).

Decision-making is seen as central to the process of telephone triage which is affected by the nature of the caller, the knowledge of the nurse taking the call, and the organisational protocols governing the process (Wahlberg et al 2003). Studies have shown that nurses see themselves as essential decision-makers within the complex and interactional process of telephone triage and computerised decision support software sometimes used is seen as a support protocol from which the nurse can decide to deviate or override (Mayo 1998). Mayo (1998) emphasises that, despite the focus on technology as a means of reducing uncertainty and malpractice risk, nurses at a telephone advice/triage in San Diego experienced the same feelings as all decision-makers in relation to confidence, certainty and uncertainty. In addition, they needed to know clinical information about their patients but some reflected that they also needed to maintain an awareness of their personal knowledge to support their decision-making.

The effectiveness of telephone triage has been subject to evaluation, much of which comes from Sweden (Monaghan et al 2003). As early as 1986, Stetson drew attention to the valuable time that a correctly performed telephone encounter can save. Markland et al (2007) considered the medical quality and costs of a computer-supported telephone nurse triage system in Sweden and found that patients received adequate guidance concerning the level of care and that the consequential release of resources benefited both patients and the health care system. This echoes the National Audit Office (2002) which stated that:

> "Evidence indicates that NHS Direct can reduce demands on health services provided outside normal working hours… the best estimate that can be generated from available data suggests that NHS Direct is off-setting around half of its running costs by encouraging more appropriate use of NHS services. This includes a significant number of callers who would otherwise have visited their GPs on how to care for themselves. In

addition NHS Direct also appears to be adding value by reassuring callers and saving them unnecessary anxiety" (pg 3).

The ability of nurses to provide that reassurance when dealing with what Stacey et al (2005) refer to as 'value-sensitive' decisions can be problematic. These authors studied the barriers and facilitators that influenced telephone triage nurses at a Canadian call centre, providing twenty-four hour telephone consultation by registered nurses who used patient decision aids and in-person nurse coaching. The results of that study identify several barriers including: the lack of a structured process to guide nurses during these type of value-sensitive calls; nurses' lack of adequate knowledge, skills and confidence in dealing with the calls and the organisational pressure to minimise the length of the call. More recently, these findings have been supported by Weir and Waddington (2008) whose research was wholly focused on recruitment, retention and emotion work in NHS Direct. Their study took place in 2002 and employed an ethnographic approach including non-participant naturalistic observation and in-depth interviews including a range of staff from one NHS Direct site. The researchers highlight an ambivalence between the 'humanistic and mechanistic' approaches embodied within NHS Direct and describe a source of contention for staff as the length of calls and attitude of managers or "… the need to follow rules and expectations of customers…" (pg 12).

The degree to which the medical model based triage function and the holistic care based helpline function combined within NHS Direct is understood by the public or the organisation is worthy of discussion. Weir and Waddington (2008) crystallised this issue as their research draws attention to the dissonance between what they describe as NHS Direct nurses' 'signposting' function and the fact that "managers and the public clearly expect more than that" (pg 12). The researchers go on to emphasise how the nature of NHS Direct work brings into contrast technical skills and caring skills

The call for clear protocols to support decision making in telephone triage pre-dating NHS Direct supports that of Jones (1993). However, Edwards (1994) argued that the "use of formal directives" would deny nurses' experiential knowledge of harmful outcomes thereby placing the caller at greater risk. Current NHS Direct research, however, suggests that this is not the case and that nurses utilise both forms of information from the decision-aid software and knowledge from their professional training and experience to inform their decision-making (O'Cathain et al 2004a).

NHS Direct and New Labour: Policy Context

As previously mentioned in Chapter One, the plans for NHS Direct were announced as part of the newly elected New Labour's modernisation agenda in the White Paper "The New NHS: Modern-dependable" (DH1997). The White Paper highlighted the need for the NHS to reduce health inequalities by intervening to improve health through an integrated care delivery "based on partnership, driven by performance". Quality and efficiency were announced as being central to a modernising programme designed to dismantle the internal market in health care created by the previous Conservative administration. It was intended that the new 24 hour telephone advice line, staffed by nurses, would provide "easier and faster advice and information" to people at home (DH 1997).

The same White Paper placed a new focus on health improvement, giving health authorities that responsibility working closely with new Primary Care Groups (later to become Primary Care NHS Trusts) centred around GP practices as the key commissioners for services. The White Paper specifically, and the modernisation agenda generally, is focused on quality, efficiency and performance measurement. The previous administration was criticised for measuring only that which could easily be measured such as 'finished consultant episodes' (DoH 1997). New Labour promised a new national performance framework underpinned by six key steps with an emphasis on value for money,

efficiency, standards, outcome measurement as well as accessibility and the patient experience. NHS Direct was born with these concepts at its heart and in a cultural and political environment:

> "… where there is a much greater emphasis on the promulgation of a range of new performance targets, inspection regimes and league tables, with the avowed attempt to maximise 'best value' and ensure ongoing effectiveness". (Parton 2006 p. 89)

The Government focus on quality in the NHS was sharpened in 1998 with the publication "A First Class Service: Quality in the New NHS" (DoH 1998) which placed a statutory duty on NHS Trusts to demonstrate quality assurance based on a new system known as 'clinical governance' (Flynn 2002). Flynn (2002) draws relevance from the fact that one of the key champions of clinical governance is Sir Liam Donaldson, Chief Medical Officer, (1998) who:

> "… explicitly refers to clinical governance as a means of preventing the failures in standards of care and medical disasters …" (p. 157)

Although Flynn (2002) acknowledges the "inherent ambiguity" that exists in the term clinical governance, he stresses the unambiguous nature of the accountability that the system places on professionals for the quality of clinical services; a level of quality scrutinised through audit and measurement of professional competency. The benefit of highly structured and scripted technological models of service delivery is the relative ease with which they can be reduced to professional competencies and the degree of monitoring which can take place (Kemshall 2002) facilitating internal and external audit. This perceived added value is referred to in the National Audit Office report of 2002. NHS Direct provides nurses with a competency framework against which they are assessed through self-assessment, peer review or managerial assessment. In addition, computerised decision support software provides feedback on

individual nurse performance and a number of live calls are subject to supervisor review (National Audit office 2002).

Ruston (2006) argues that the movement towards a technical approach to healthcare which prescribes practitioners' activities through the use of "algorithmic rules", is a means by which professional autonomy and decision-making can be controlled, thereby reducing risk to the organisation.

The need to ensure safety at NHS Direct through the tightly structured use of algorithm protocols defined by computerised decision support software, bears a close resemblance to the scientific-bureaucratic model defined by Harrison (1999) who describes a tightly structured approach as protocol or guidelines driven and emphasises that:

> "… the logic … of guidelines is essentially algorithmic" (p 3)

The presence of independent judgement and knowledge seems to hold less prevalence as the model is based on research evidence coupled with algorithmic protocols designed to minimise risk (Harrison and Dowsell 2002; White and Stancombe 2003; Ruston 2006).

The increasing appeal of the scientific-bureaucratic approach is seen in the context of major public inquiries where risk was seen as having been inaccurately identified and managed; in particular these included The Bristol Inquiry (2001) and The Royal Liverpool Children's Inquiry (2001). The description of the computerised decision support software used by NHS Direct as 'minimising malpractice risk' within this wider policy and political NHS context, has even greater resonance. A highly scripted approach to service delivery which is seen to reduce risk in professional decision-making was well regarded at a national strategic level and its foundation on evidence and research, as per

scientific-bureaucratic model, was a major influence in the procurement process for the NHS Direct computerised decision support software.

The debate regarding the value of different styles of bureaucracy and the type of knowledge it utilises is raised by Lam (2000) and described by Ruston (2006). Lam contests that the dominant knowledge type depends on the type of organisation. She identifies an alliance between 'embrained knowledge' and 'professional bureaucracy' typified as being individual and dependant on skill, where highly skilled professionals acquire knowledge through formal education and training and are governed by professional bodies. This description could be applied to a variety of professions including medicine and nursing. Lam (2000) goes onto identify 'encoded knowledge' typified as knowledge which is codified, explicit and collective, which facilitates organisational control and does not capture individual skill, judgement or tacit knowledge. Encoded knowledge is closely aligned with a machine bureaucracy, features of which are described by Flynn (2002) as:

> "… a clear division of labour and specialisation, close supervision, and continuous efforts to codify knowledge and skills to reduce uncertainty (and variation), and an emphasis on managerially generated rules, monitoring procedures and performance standards. A machine bureaucracy tries to minimise the use of tacit knowledge, and corrects mistakes through performance monitoring" (p167).

This helps illustrate the relationship between the computerised decision support software system and Flynn's description of machine bureaucracy. Further reflection on the NHS as an organisation, the increase in emphasis on professional competency frameworks as listed on the Skills for Health website (http://www.skillsforhealth.org.uk/), the introduction of the Knowledge and Skills Framework (DH 2004) and the ever increasing numbers of performance

indicators and appraisal systems, lends some support to the notion that the dominant knowledge type within the NHS is being increasingly shaped by encoded knowledge and a machine bureaucracy represented by the scheme of clinical governance (Flynn 2002; Ruston 2006). Parton (2006) provides a context of New Labour's modernisation agenda citing Newman (2001) and highlighting how practice which is based on evidence requires measurement and audit in order to contribute to the "new form of managerialism" (p 90).

Discussions and debates about what is information and knowledge are pertinent to an analysis of professional use of information databases. Information can be described as the processing and storage of knowledge (Rasmussen 2000). Rasmussen (2000) refers to knowledge as mental ideas and facts which have not been processed into information. Aas (2004) summarises Rasmussen's view point and emphasises how knowledge is personal as opposed to the usually collective and social dimension of information; information can change knowledge, but increased information does not necessarily equate with increased knowledge. Aas draws on the views of Brown and Duguid (2000) and quotes them as stating:

> "People treat information as a self-contained substance. It is something that people pick up, possess, pass around, put in a database, lose, find, write down, accumulate, count, compare and so forth. Knowledge, by contrast, doesn't take as kindly to ideas of shipping, receiving and quantification. It is hard to pick up and hard to transfer" (pg 120).

The authors clearly connect knowledge to practice as it includes and makes sense of information but also embodies tacit dimensions drawn from practical experience. Brown and Duguid (2000) warn that a shift from knowledge to information represents a shift from people to a disembodied process.

Authors have considered the potential impact of privileging information over knowledge and identify a disembodied process governed by information processing where mention of 'individuals' becomes irrelevant and the focus is turned to categories of 'dividuals' that can be further sub-categorized (Deleuze 1997; Jones 2000; Brown and Duguid 2000; Aas 2004). Manovich (2001) presents a frightening rivalry between two 'enemy ontologies'; narrative - where stories with a beginning and an end are presented by an author who decides the order it will be heard and which creates a logic, and database – where information is collected and compressed, the order is defined by the person using it and logic is selected.

Nurse Identity and clinical judgement

The debate regarding the privileging of certain forms of knowledge has some resonance with the issue of nursing identity. Kelly and Symond (2003) trace the history of nursing through discourses on caring and emphasise how the care services privileged 'cure' associated with medicine, over 'care' associated with nursing with the power clearly assigned to the former. They go on to state how:

> "…. 'powerful' interpretations of governmentality tended to devalue nursing care in favour of developing technological interventions which were the province of the medical profession… generations of nurses have therefore been subject to the need for acquiescence to medical dominance and an expectation that they would care for groups labelled by society as unresponsive to regimes of cure…" (pg 114).

The authors describe the 'identity crises' that has ensued as nurses have sought 'professional prestige' by privileging the medical profession's use of science over their own caring skills and the contribution of these skills to providing a cure.

Taylor and White (2000) urge caution in the blind acceptance of the 'technical procedural approach' and point out that certainty can only be achieved in particular areas of professional activity whilst the remainder of activity, in the field of health and welfare explicitly, is by its nature, uncertain and requires 'complex qualitative' judgements to be made. The scientific-bureaucratic approach is rooted in evidence based practice, the 'gold standard' of which remains the randomised controlled trial. However, as White and Stancombe (2003) emphasise

> "Evidence based practice does not translate straightforwardly to some areas of professional practice, particularly those concerned with human relationships" (p29)

They go on to highlight the difficulties of trying to reduce clinical judgement to computer algorithms and emphasise the fundamental human nature of case formulation. Greatbach et al (2005) agree arguing that the professional expertise of nurses 'resists' being transformed to rule-based systems. However, Weir and Waddington (2008) provide another perspective suggesting that the frustration caused by the restriction of skills and experiences that comes about through the necessity of following algorithms, amounts to a reconstruction of the work identity. So rather than resisting a transformation of identity through use of rule based systems, nurses are party to its reconstruction.

Hypothetico-deductive strategies are criticised by White and Stancombe (2003) as being inadequate for dealing with ambiguity and underestimating the uncertainty in everyday decision-making. This is supported by Hanlon et al (2005) who reflect on the role of management of NHS Direct as delivering 'certitude'' and see this, coupled with the need to meet organisational targets, in conflict with the rationality of nurses who see the essential elements of delivering a good quality service as being anchored to maintaining flexibility, autonomy and discretion. They state:

> "In many ways, what is occurring in NHS Direct is a struggle over what form of knowledge predominates in the organisation" (p149).

However, the process of assessing in any medically focused healthcare setting can arguably be seen as a long tried and tested means of hypothetico-deduction the aim of which is to try and reduce risk. As Strauss et al (1997) emphasise:

> "Assessing is concerned with estimating and evaluating the graveness, controllability, and rectifiability of risks and dangers … Assessment implies assigning priorities to hazards" (p88).

Given the political and policy context of the moment in which NHS Direct was delivered to the nation, specifically in terms of managing risk and uncertainty following high profile enquiries, the question arises whether or not the focus is on reducing risk to the patient or to the organisation.

Conversation and Advice giving in institutional settings: Institutional talk.

On calling this mainly nurse-led service, callers reach a call-handler who records the biographical details of the caller and determines the level of urgency. Unless the call-handler directs the call immediately to the ambulance service, the call is put in a queue for nurse triage. A nurse then returns the call, the speed of which is determined by the level of urgency assigned to it by the call-handler and the volume of calls in the system at that time. Performance measures for NHS Direct include targets related to the number of callers that can not get through, the number of calls abandoned after thirty seconds, the time taken for callers to get through to a nurse and the average time for a nurse to return a call when the caller could not be put through to a nurse immediately. In addition, the computer system is able to provide detailed feedback on individual nurse performance and this is enhanced through other means e.g self-assessment, review of taped and live calls and peer review (National Audit Office 2002).

The process of nurse triage is supported by a computerised decision support system known as CAS. Hanlon et al (2005) highlight the role of the system in managing risk and quote from the nurses' software training manual (date not given):

> "CLINICAL ASSESSMENT SYSTEMS (CAS) ensures a uniform approach to processing a call. This approach minimises malpractice risk as well as improving call centre performance" (p 1-2)

The National Audit Office (2002) clearly describe this computerised decision support system as being there 'to assist' nurses in "advising callers on the appropriate course of action to take" (p7). The process is framed by a series of algorithmic questions otherwise known as protocols. Greatbacht et al (2005) give a concise description of what algorithms are and how they are used:

> "The algorithms are organised in terms of symptoms (such as 'dizziness', 'cough', …) as opposed to 'conditions' (such as 'diabetes', 'angina'…)…Nurses are expected to establish the nature of the patient's symptoms, enter details of the patient's past medical history… select an appropriate algorithm, and then ask the symptom-based questions that CAS [the computerised clinical assessment system] prescribes". (pg 805)

The precise development of the system is not described by any authors. The CAS product itself, its authorship, evidence base and development, would appear to be very much protected and hidden by US copyright law. Changes to the software protocols within NHS Direct are informed by a 'request for change' process whereby the Central Team Project at NHS Direct are informed by nurses of any problems or deficiencies in CAS relating to a particular algorithm. The nurses recommend how the software might be changed and updated (Hanlon et al 2005). Hanlon et al (2005) highlight tensions within this process:

> "… while the system is being update the nurses are still supposed to use CAS rather than their own knowledge and be driven by the software system even if it is incomplete and flawed" ([g 162)

My own observations of how NHS Direct functions support those of authors who have described the process. Nurses are presented with an on-screen question to ask the caller and are either presented with a choice of 'yes', 'no', 'uncertain'. The nurses select their choice in response to the caller's answer to the question prescribed by the software. The computer system then presents further lines of questioning eventually reaching a 'final disposition'. On the same screen as the algorithmic questions, the nurses are able to add any notes they feel are relevant to the question or the caller's symptoms, they can read clinical explanations that inform the questions and they can also see details of conditions and medication which they should bear in mind during the process. The process reaches a close when the algorithm is completed and CAS prescribes the final disposition which include: emergency referral 999; visit A&E; referral to primary care services urgently or routinely; referral to other professional such as health visitor or pharmacist; home care. Nurses can either override/upgrade, or underride/downgrade the final disposition, documenting their reasons for doing so. Items are then selected from a list of care topics which include the advice recommended by CAS.

CAS was chosen as the preferred national system following a period of time where different NHS Direct sites were using different systems. The procurement process was described by the National Audit Office (2002) as 'thorough' and the key principle which assured its choice was clinical safety added to which was the flexibility of the algorithms or protocols, being refined through experience. The National Audit Office Report also highlights how a key feature of choosing CAS lay in the target relating to minimise the number of calls abandoned after 30seconds.

> "NHS Direct ascribed abandonments … primarily to the pressures of increasing levels of demand on sites with computer software that generates longer call lengths. It has aimed to address this through completing the conversion of all sites to the AXA [CAS] software…" (p11).

Organisational Configuration of Call Sequence

The work of the nurse taking a call at NHS Direct is similar in many respects to the work of call takers at sites providing emergency assistance studied by Zimmerman (1992). It involves the same degree of call processing requirements in which both parties have to participate and which is necessary for the organisation requirements of NHS Direct. The call takers and callers also have to cope with the variable circumstances presented during the call. Zimmerman identifies six distinct phases to an institutional call sequence:

Pre-beginning:

Constituted by the caller dialling a pre-advertised number thus projecting their need for help of some description (Whalen and Zimmerman 1987). The call takers at NHS Direct are already primed to hear a request for help before anyone speaks. The character of the call is already established.

Opening/ID/acknowledgement:

The call taker operates under the auspices of an official identity projected by the clear introduction of the service name and purpose in their first turn. The call handler immediately moves into an interrogative sequence before the caller makes their request.

> "You're through to NHS Direct, I'm (name), I'm a call handler. What's the location of the person needing advice"

The next question presents as a further interrogation and the caller still hasn't made their request although the type of interrogation is contributing to determining the nature of the problem and the type of call.

"Are you calling because of an injury or new or worsening health problem"

The call handler here is trying to establish if the caller needs a nurse or straight forward health information. If the answer is 'yes' they select the appropriate protocol then provide a space for interaction which can establish the "kind of call this is" is provided (Schegloff 1979). The 'reason for the call', the 'request' is dealt with in an institutional setting at a much earlier point than in 'mundane' telephone calls which include sequences such as 'greeting' and 'how are you' which are not relevant to what are virtually anonymous encounters (Schegloff 1986).

Request

The caller may convey their request for help in a variety of ways including using what Zimmerman (1992) describes as 'descriptions' – declarative sentences giving information about a problem with some context, or 'narratives' – more extended, organised, chronological accounts.

Interrogative Series/sequence

This part of the sequence includes a series of questions prompted by the algorithm. This may involve some degree of repetition. Zimmerman (1992) describes how the agenda of the call has to be worked out 'turn by turn' and how participants' concerns enter the interaction for "recognition by one party and response by another".

Response

Final disposition and advice.

NHS Direct also includes an element described as ‘worsening advice’ at the very end of every call:

> “If the situation/symptoms become worse, you are still worried, you have new symptoms or the symptoms you have described persist – call back”.

Greatbach et al (2005) emphasise how:

> “The ways in which advice and information is delivered in NHSD calls does not solely rest on the conduct of nurses … the NHSD service is jointly produced by professionals and consumers” (p 827).

It is therefore, important to explore the nature of the interaction between professional and consumer, nurse and caller, in terms of institutional talk with particular reference to conversation and advice giving.

Institutional talk is difficult to categorise as it takes place in a variety of settings and for a variety of purposes (Taylor and White 2000). Institutional talk occurring within health care settings and which is rooted in telephone triage and advice giving has the added complexity of making assessments without touching or seeing patients and making decisions about appropriate, timely ‘dispositions’ (Mayo 1998, Zimmerman 1992).

However, despite this difficulty, the exploration of this type of institutional interaction is important in order to establish and ensure a level of effectiveness since:

> “… clients’ perception of advice is affected by the conversational environment in which the advice is actually delivered”
>
> (Silverman 1997:112)

Barnes (2005) echoes this and reflects on the use of conversational analytic and ethnomethodological studies of health care work practices. She calls for the inclusion of such studies in "non-traditional" sites such as NHS Direct.

Client's Expectations and Perspective.

Advice giving at NHS Direct requires a degree of eliciting the clients' perspective and preparing a suitable environment for delivery of advice. This is discussed by David Silverman (1997) following his study of HIV counselling services. Although, NHS Direct is clearly not a counselling service, Silverman (1997) describes how:

> " … many counselling interviews which take place before and after the HIV antibody test involve the delivery of advice in one form or another…" (pg 111)

Silverman (1997) draws attention to the strong correlation between advice givers attempts to gain the recipients' perspective prior to giving advice and the marked acknowledgements of advice recipients. In addition, advice that is given 'out of the blue' without any attempt made by the advice-giver to ascertain the client's perspective, is greeted by the client with minimal acknowledgement (Silverman 1997). This is important in establishing how effective or otherwise NHS Direct practitioners are in giving advice.

Advice Formats

Silverman (1997) identifies how reception of advice in HIV counselling is also influenced by the format used by the advice giver. The two formats identified are *interview format*, otherwise referred to as interrogative, whereby the call taker asks questions and the caller answers, and *information delivery format* whereby the advice-giver delivers information and the recipient is virtually silent. A combination of these formats involves the advice-giver using interview format to elicit the recipient's perspective and only when this is established, uses

information delivery format to give personalised advice based on the problems and concerns raised by the client.

Maynard (1991) also identifies this sequence as an effective means of advice giving and highlights its use in paediatric interviews where the diagnosis statement is delayed until the patient's perspective is gained.

When considering the nature of institutional talk, it is important to examine the methods and techniques used in interaction which achieve the organisational business, and the means by which the professional establishes and maintains a relationship with the client (Taylor and White 2000).

Institutional and Everyday Talk

Drew and Sorjorien (1997) draw attention to the fact that there are no fixed or permanent boundaries between institutional and everyday talk, and the boundaries may be crossed during a conversation. The telephone conversation that occurs between an NHS Direct nurse and the caller is governed to a large extent by institutional protocols and objectives. A list of algorithms guide the professional and thus the conversation in order to accomplish the business of triage. Exploration of how nurses accomplish their talk and employ conversational strategies will help in considering effectiveness of telephone advice giving. However, Silverman (1997) makes the valid point that there is no right or wrong way to interact with clients (pg 868).

Empathy, paraphrasing and repetition

The value of using empathy in institutional talk is worthy of consideration as a conversational strategy. The value of empathy lies in the clarity and understanding of the clients' situation that is gained by entering their world "without prejudice", putting aside personal values and "being sensitive, moment to moment, to the changing felt meanings which flow in the other person" (Rogers 1975:4). Weir and Waddington (2008) state that nurses should show

their caring attitudes whatever the context of healthcare provision, and point to the need for NHS Direct nurses to convey empathy and emotional support through the use of their voice. The authors draw particular attention to how this relates to nurses' confidence, professional knowledge, communication skills and self awareness.

Paraphrasing the words of the client can be used as a technique which effectively acts as a carrier for empathy. It is a strategy which acts as a continuer and serves to keep the conversation going (Rogers 1975, Nelson-James 1988, Silverman 1997).

Tannen (1987) argues that the use of repetition in talk is another strategy to "keep talk going". Silverman (1997) urges caution however, and states that:

> "Repetition of another's utterances may be heard as two different activities:
>
> 1. I hear what you say
> 2. Please warrant what you say" (pg 86)

Membership categories

Our expectations of appropriate behaviour are purported by Sacks (1972) to come from the social or membership category to which we assign individuals. Describing a person's behaviour as being outside the bounds of acceptability defined by their membership category is highlighted by Silverman (1997) as conferring upon that person a negative moral assessment. Silverman uses the example of mother and child to outline how we would recognise the pairing as a 'team'. Moreover, if the mother picks up the baby, we further define her as the mother of that baby, rather than any mother, since she has exhibited behaviour appropriate to that social grouping (Silverman 1997:68).

This echoes the position taken by Sacks (1972) who describes how membership categories occur in pairs which he refers to as 'standardised relational pairs'. Examples include husband – wife, mother-child, where expectations of how one part of the pair relate to another is established. Sacks (1972) describes how we ascribe deviance to the person whose behaviour is not synonymous to the category to which they are assigned.

This raises interesting questions with regard to how people ask for help or how they articulate difficulties they may have with coping and is discussed in more detail at Chapter Six. The dilemma is raised by Baruch (1982) cited in Taylor and White (2000 pg 85) that parents have a need to demonstrate their depth of feeling for their children and how mothers in particular demonstrate their 'moral adequacy':

"… by emphasizing how regularly and frequently they sought advice and expressed concerns" (pg 86)

Kelly and Symonds (2003) take an alternative view: given that society cannot function without regulation, threats to regulation such as illness and lack of well-being will be constructed as a form of social deviance. They place medical and nursing professions as the professions which are able to define "normal experiences" and "permissive behaviours" therefore offering:

> "… society the means to return to reality, or to limit the impact of their deviance upon others". (p115)

Implicit within this, in terms of nursing practice, is the need to assess whether behaviour is normal, permissive or deviant. The result of that assessment will then impact on the nature of advice given.

Conversational Strategies: narrative and detail, active voicing, extreme case formulation

Taylor and White (2000) draw on the work of Hutchby and Wooffitt (1998), Wooffitt (1992) and Pomerantz (1986) to describe three types of conversational strategy. These strategies, 'narrative and detail', 'active voicing' and 'extreme case formulation' can give important insights into the nature of caller and nurse interaction. In particular the use of these strategies by the caller can suggest how the caller feels their information maybe or is being perceived.

Narrative and detail is a strategy which attempts to add a layer of plausibility to the caller's account especially when met with disbelief (Taylor and White 2000). Hutchby and Wooffitt (1998) describe how active voicing, a means of adding reported speech of the caller and others to an account (Wooffitt 1992) is used in similar circumstances to narrative and detail that is to add strength to an account in the face of denial or disbelief (pg 225). Extreme Case Formulation is another device intended to provide added weight and impact to the caller's talk (Pomerantz 1986) and include terms such as 'best', 'worst', 'always', 'never' (Taylor and White 2000).

Given that all three strategies are employed to add impact, weight and plausibility to the caller's account, it is interesting to consider where they are apparent within the call data of this study. It is particularly interesting and important to consider if there is anything in the nurses' talk that prompts the use of the strategies or states or implies disbelief at the caller's account.

Advice giving, Advice as Information, Shared Alignment

As has been discussed, how well advice giving is aligned to the caller's stated problem, will affect how it is accepted. The configuration of the call sequence which is operational at NHS Direct is discussed above, but it is important to say here that, following the caller's description of their problem and their use of any of the strategies discussed above, there then follows the advice-giving sequence.

If advice is given prematurely, or does not appear relevant to the caller, then there is a risk that the advice will be rejected (Jefferson & Lee 1981; Heritage & Sefi 1992; Silverman 1997). In order to minimise the likelihood of advice being rejected, advice can be delivered in an ambiguous format like information delivery or what Silverman (1997) describes as 'advice as information sequence' (AIS).

AIS has the advantage of allowing the caller to 'choose' to hear information as relevant to them, or not relevant to them. This avoids some of the implicit difficulties in giving what is unambiguously determined as personalised advice and has the further advantage of shielding the advice-giver –

> "… from some of the interactional difficulties of appearing to tell strangers what they should be doing…" (Sliverman 1997, pg 177)

the dangers of which are clearly portrayed in Heritage and Sefi's (1992) account of health visitor and client/mother interactions.

Silverman (1997) echoes Heritage and Sefi (1992) and highlights how advice-giving can also meet with resistance from the advice recipient if it implies that the recipient belongs to a particular category for example, if a nurse advises a mother to respond to a baby's cry more quickly, the mother may take that as implying that her previous response was not quick enough. This, therefore, assigns the mother to an 'inadequate' category which will, understandably, result in resistance to the advice in some cases.

Other devices can be used to minimise resistance or rejection of advice but are applicable only within the context of a relaxed interview (Silverman 1997) which the business of NHS Direct may not allow.

NHS Direct Research

I prepared to organise data collection from NHS Direct after having received appropriate approval and honorary contract arrangements. At an introductory visit, I was taken through how the triage system worked and was asked to imagine that I was a caller so that we could work through an imaginary problem. Not surprisingly I chose a crying baby scenario where a mother was on her own at midnight on a Friday with no support and a baby who would not stop screaming. At the end of the 'call' the nurse recommended I contact my health visitor, which in reality would not have been possible until the following Monday.

NHS Direct at this time (2001/2002) was only three to four years old and was not available across the whole country. It was a new government funded service under close scrutiny. At the precise time of my data collection and the period leading up to it when I was undertaking my 'background' reading, there was not a great deal of good quality research literature available. The literature concerned with NHS Direct specifically has emerged as the service has matured and developed. My study has involved a dual phase data collection and analysis with Phase One taking place in 2002 and Phase Two in 2006. During this time I did not stop reading and also kept myself up-to-date with the evolving literature mainly concerning myself with technological developments and updates so that I was able to moderate the second phase of my study, a focus group, with some credibility.

Although I was aware of the growing literature, I adhered to the grounded theory strategy whereby the second phase of my study was founded on the findings from Phase One of my study, not on the emerging findings from other studies but reference to these studies is made both here and in Chapter Six. What follows is a review of the key research literature relating to NHS Direct that has emerged since the design of my study. As such, this literature did not inform the design of my study but it has particular relevance in relation to my research findings.

NHS Direct research in the early 2000s included issues relating to the use of different computerised decision support software across different sites prior to the decision of procuring CAS as the preferred system. O'Cathain et al (2003) aimed to examine the consistency of triage outcomes by nurses using four types of computerised decision support software including CAS. 119 scenarios from ambulance calls (not NHSD) were presented to four NHS Direct call centres. The study showed large differences in triaging outcomes. However, the researchers were unable to separate potentially influential effects from the nurses themselves and the effects of different software systems (O'Cathain et al 2003). The tensions between the operation of rule based systems such as that underpinning NHS Direct and autonomous practitioners, such as nurses, is raised by different authors (O'Cathain et al 2004b; Hanlon et al 2005; Greatbatch et al 2005; Ruston 2006). Ruston (2006) describes a general move towards 'scientific-bureaucratic' medicine which specifies clinical action through algorithmic rules. Most authors agree with Hanlon et al (2005) who describe CAS as offering a standardized means of assessment regardless of differences between the nurses knowledge and professional background, or the social context of the caller. The success of this approach in terms of achieving this level of standardization, however, is called into question.

Monaghan et al (2003) researched a comparison in the length of time taken to triage calls about children with 'fever' and 'rash' by children's nurses (RSCNs) and general nurses (RNs). They also considered the triage outcomes between these two groups and the difference in results. Their study involved considering a total of 1281 calls. The researchers found that, despite the fact both groups of nurses had undergone the same NHS Direct training programme and were using the same computer decision support software, there were significant differences in practice between RSCNs and RNs when triaging children, with RSCNs being generally faster than RNs. The authors prompt the question about what actually is involved during a consultation. Pettinari and Jessopp (2001) describe how NHS Direct nurses visualise the caller in their environment and use a variety of

interactional activities to elicit accurate information from callers that, in a face-to-face consultation the nurse would be able to see. Monaghan et al (2003) draw on this research to suggest a partial explanation for their findings that is that an RSCN will be able to provide a more rapid response if the nurse has encountered a child with the presenting symptoms in previous professional practice.

O'Cathain et al (2004a) undertook a qualitative analysis of semi-structured interviews with twenty four NHS Direct nurses in twelve sites with the aim to explore how nurses perceived their role and that of the computer decision support software in NHS Direct. They support the findings of Monaghan et al (2003) in that their findings showed that nurses without clinical knowledge relevant to the call relied more on the computer decision support software. They go further and emphasise how nurses see the software and their own clinical knowledge as being essential to the decision-making process. This process is two-fold whereby nurses seek consensus from the software to support their decision, and where they are ready to override the software recommendation if necessary (O'Cathain et al 2004a). This can lead to variance in practice which, as Monaghan et al (2003) point out, is noted in the National Audit Office Report (2002) with nurses often choosing to adopt a more cautious approach.

The variance in practice and the extent to which professional decision-making is limited by the NHS Direct 'machine bureaucracy' is the focus of research by Ruston (2006). Utilising a research strategy of interviews and observation across three sites at one NHS Direct call centre, Ruston (2006) found variation in assessment evidenced by the number of times the nurses override the algorithm disposition. She found 19% of calls were overridden, of which 38% were downgraded and 61% upgraded thus reflecting the cautious approach described in the National Audit Office Report (2002). Ruston's findings revealed the mixed views of nurses regarding the algorithms which were both positive - valuable and safe, and negative – limiting especially in relation to quality of assessment. She suggests that the data throw some light on the topic of attempts to standardize

professional behaviour through implementation of scientific or machine bureaucracy, and how NHS Direct nurses 'devise methods' to avoid this and operate in a fashion more akin to their professional culture.

Ruston (2006) supports the position of Greatbatch et al (2005) who argue that nurses privilege their own knowledge and expertise over that of CAS and describe methods of doing so as rephrasing algorithmic questions, re-ordering questions, supplementing questions, or not asking the questions at all in addition to overriding the algorithm's final disposition. Their paper is part of a wider ESRC/MRC funded project including a variety of data collection methods such as interviews, observation and analysis of call recordings made to two NHS Direct sites. The paper referenced here includes analysis of 60 call recordings to one NHS Direct site. Hanlon et al (2005) published a subsequent paper which aimed to analyse how NHS Direct uses technology and nursing expertise to deliver healthcare. These authors draw from Berg's (1997) suggestion that protocols and guidelines are increasingly reductionist in medical work and prioritize the measurable as being 'scientific':

> "Thus, for him, those occupations or professions that deal in these 'non-scientific' spheres often attempt to gain a veneer of 'science' by trying to make objective and explicit, their implicit expertise." (pg. 150).

The researchers carried out thirty three in-depth interviews and non-participant and participant observation of staff from two sites and found that if the computer system and process is made obvious to callers, it can yield an 'alienated' response that hinders effective advice giving. The authors explain how callers want tailored health care which recognises their specific context. The NHS Direct approach of gradually eliminating (or confirming) a worst case scenario worries callers that their particular issues have not been recognised. The nurses then use CAS 'selectively' in order to maintain the nurse/patient relationship (Hanlon et al 2005).

The ability to manage the interaction between nurse and caller is discussed by Pettinari and Jessopp (2001) whose study aimed to identify and describe nurses' perceptions of their practice in managing interaction in the absence of visual clues at NHS Direct. Their research strategy included semi-structured interviews with new NHS Direct nurse employees then repeat interviews at six months. They found that nurses actually developed skills to compensate for the lack of visual contact and to manage the interaction. Professional background and experience informed the ad hoc development of these skills. However, O'Cathain et al (2004b) found no evidence that clinical background or length of NHS Direct experience affected nurses' triage decisions. Their multi level analysis of sixty calls triaged by 296 nurses yielded a new hypothesis "that individual nurses' approaches to risk may influence triage decisions" and recommended that narrowing nurse recruitment to particular clinical backgrounds would be unlikely to have any benefit. As indicated by Monaghan et al (2003) however, nurses triaging calls about children may need to draw on skills and experience outside the computer decision support software. This point is also touched on by Hemingway and Lees (2001) in their paper outlining the use of role-play as an audio teaching method for nurse advisors. The authors indicate how mental health calls are a source of stress for NHS Direct nurses as a very small number are trained mental health nurses.

Both Hanlon et al (2005) and Greatbatch et al (2005) very much emphasise how nurses resist the constructions of CAS and make a range of tacit judgements and value their own experiential knowledge as well as that of CAS. Hanlon et al (2005) discuss how the social context that is denied by the remote delivery of health care is re-created as nurses supplement CAS with their own knowledge and knowledge gained from probing and interpreting during the nurse/caller interaction. This supports the findings of Morrell et al (2002) who aimed to 'characterise' the NHS Direct workforce. Their method included postal survey of NHS Direct nurses in 17 call centres and their response rate was an impressive

74%. At the time of their study there were three computer decision support software systems in use but the difference in software was found to make no difference to the finding that 38% of nurses said they 'always' relied on their professional experience in their NHS Direct call work, and 61% replied 'often', or 'sometimes' to the question. The authors place this in the context that NHS Direct recruits well qualified and experienced nurses many of whom come from accident and emergency departments.

Using information from past experience is an issue dealt with by Ruston (2006) who highlights how this past experience is used in conjunction with information particular to that call and the routines specified by the algorithm. She also emphasises how the 'codified' knowledge contained within the algorithm sometimes disagrees with the nurses' tacit knowledge about sensible advice for the specific situation defined in a call. In her study, Ruston describes the nurses as seeing the action of using their own professional and tacit knowledge in conjunction with the algorithm as necessary in order to minimise risk as adhering to the algorithm strictly could potentially result in inadequate assessment and advice. Specifically, Ruston shows that nurses either explicitly override dispositions and/or covertly manipulate them. This manipulation she describes as a means of avoiding managerial control.

The tensions between managerial drive to meet targets and the nurses' drive to maintain professional autonomy and credibility is brought into focus by Hanlon et al (2005). The authors crystallise the tensions as a battle between "predictability via the technology" and "flexibility and autonomy … to deliver health care and advice to particular individuals". Ruston (2006:257) agrees and presents a picture of an increasing "imposition of bureaucratic devices to control professional behaviour". Hanlon et al (2005) go further and suggest that, as nurses at NHS Direct continue to consult their colleagues for advice and second opinions, this presents a further difficulty for managers in deciding who is accountable for the information given to the caller: CAS, nurse, or nurse's

colleagues. However, the authors' claim that this introduces ambivalence around accountability issues is fragile, since all nurses operate to some degree within frameworks of protocols and guidelines, and will often consult colleagues. The Nursing and Midwifery Council (NMC) clearly lay out expectations regarding accountability in the 'The Code: Standards of conduct, performance and ethics for nurses and midwives' (NMC 2008):

> "As a professional, you are personally accountable for actions and omissions in your practice and must always be able to justify your decisions."(pg 1)

Chapter conclusion

Through a critical review of relevant literature, this chapter draws attention to the growing professional and political interest in parenting education and support, the need for which, it is argued, is 'normal' and the professional response to which should be 'universal'. The chapter examines how stress, such as the stress of a crying baby, can impact on parenting ability and the potentially negative impact on child welfare is acknowledged. The literature highlights the importance of professional responses that meet the need for parents to be supported through their coping challenges. In relation to this, the role of telephone triage/helpline and NHS Direct is considered with particular reference to the organisation's protocols and the algorithmic decision-aid software and its role in minimising risk and contributing towards achieving performance measures. This discussion is contextualised within the political 'modernisation' agenda of the late 1990s and early 2000s, the scheme of clinical governance and the foundations of evidence-based practice.

The growing literature and research focusing on NHS Direct is largely in agreement that efforts to standardize nurse practice at NHS Direct, through expert rule based decision support software like CAS, are limited as nurses draw on their own professional and tacit knowledge when making assessments and

decisions. Nurses develop skills as NHS Direct practitioners but do so in an ad-hoc way based on their professional background. Professional expertise and background also informs triage outcomes and is likely to yield differences in decisions regarding overriding the algorithm final disposition. In addition, nurses manipulate the algorithm by using it selectively in order to ensure the algorithm disposition concurs with their professional judgement.

The tensions between standardizing practice and maintaining professional autonomy in order to deliver flexible health care are frequently alluded to in the literature although no empirical evidence is presented which confirms that the conjunction of professional and tacit knowledge with that contained in the algorithm in any way minimises risk or that strictly adhering to the algorithm increases risk. The reliance on both forms of knowledge is used to explain variances in triage outcomes. However, the tensions that are present are not discussed in terms of organisation identity. A question that remains to be asked is; are further tensions caused because the NHS Direct service is badged as both triage and health advice line which are subtly, but inherently, different? In addition, the literature, whilst acknowledging that nurses rely to some extent on their professional knowledge, do not offer explanations of when and why this might occur during the career of an NHS Direct nurse, or whether the balance between reliance on algorithm inherent knowledge and professional knowledge alters when the worst case scenario has been eliminated and the knowledge intensive, often value sensitive, task of giving non-emergency, non-medical advice is required.

The nature of nurse/caller interaction is explored through the literature concerned with institutional talk with particular reference to conversation and advice giving. The interactional and conversational concepts, tools, devices and strategies that emerge from the literature which are seen as fundamental to advice giving are discussed critically and their relevance to NHS Direct emphasised. These various aspects, drawn from relevant literature (predating the data collection

phase of the study), are developed to form an essential analytical framework for Phase One of the study which is described more fully in the following chapter.

CHAPTER THREE: Methodology and Methods

Introduction

The aim of this chapter is to explain the chosen methodological approach and techniques employed in this research. The chapter charts the route taken in the early design phases of the study and describes how the early stages of data collection informed its later orientation towards a focus on NHS Direct and the processes of decision-making and nurse/caller interaction in the context of provision of advice to parents calling with persistently crying babies. The methodological orientation is informed by a broad constructionist approach and the ontological perspective of the study is influenced by and located within the wider tradition of grounded theory. Phase One of the study draws on methodology from discourse analysis and Phase Two from thematic analysis; the use of both are described and discussed critically and the means by which methodological rigour is ensured, is discussed.

Methodology

The term 'flexible' best describes the overall approach to this study as it encapsulates how the research anticipates:

> "… that the design will emerge and develop during data collection".
>
> (Robson 2002: p 164)

Robson places this term alongside the alternative 'fixed' design of most quantitative approaches which necessitate a clearly structured, pre-planned design before data collection begins.

Constructivism

The ontological perspective which best captures the nature of this study is that of constructivism, that is that social meanings are continually constructed by social

actors (Bryman 2004). This is an opposing ontological position to objectivism which holds that social meanings exist independently of social actors. Both of these positions are in direct contrast to the positivist approach which holds that there is one reality that exists, and the researcher's job is to find it; a view which is now frequently challenged since researcher's will always be affected by the social and political environment and cannot be value free (Grant and Giddings 2002). I have chosen to use the terms 'fixed and flexible' to describe the designs of studies and reserve my use of 'qualitative and quantitative' as defined by Guba and Lincoln (1994) to describe different "types of methods". This study embodies the constructivist approach in that reflections, experience and findings from the first phase of the study inform the choice of methods and techniques in the second.

The 'reality' which is constructed in the analysis of calls that form Phase One of the study is embodied by the 'social actors' who participate in the calls, that is the nurses and callers. Since neither participants were aware at the time of the call, that their conversation would be included in this particular study, the 'reality' that was observed was natural. It could be argued that observation is more akin to a positivist paradigm than a constructivist, especially since there is no interaction between the researcher and the participants. However, a key difference is that I did not approach the 'observation' as an 'expert' who is testing a hypothesis or establishing 'cause and effect' as is the goal of the positivist researcher (Grant and Giddings 2002). In addition, participant observation is acceptable within the grounded theory methodology which underpins this research and which is considered in more detail below.

Following the completion of Phase One, there emerged more questions about how nurses make decisions and interact with callers who call NHS Direct with concerns about a crying baby. The social actors that helped further to construct reality at this stage were the nurses who attended the Phase Two focus group.

Claiming a particular ontological position constrains the epistemological position, given that what counts as knowledge depends on the perspective held on the nature of reality (Grant and Giddings 2002). This, therefore, logically constrains methodology. For this reason, I hesitate to claim an affiliation with a singular paradigm. As Lawler (1998) highlights, there is not a single research methodology or paradigm that suits all of the huge complexities that impact on nursing practice. My aim, therefore, is to remain open to different methodologies and ensure congruency between my research questions and methods (Grant and Giddings 2002).

Grounded Theory

The grounded theory approach seemed most sensible for a flexible design which was emergent in nature. Since such little research had taken place at NHS Direct at that time, and as the organisation was evolving, the flexibility of the grounded theory approach was particularly well suited. Although this study is not fully engaged with the grounded theory methodology, it is influenced by it.

As Bryman (2004:401) highlights, a clear definition of grounded theory is not straight forward. Following recognition of the influential sociologists, Glaser and Straus (1967), then Strauss and Corbin (1998), Bryman underlines the essential features of grounded theory in its more recent application:

> "… two central features of grounded theory are that it is concerned with the development of theory out of data *and* the approach is *iterative* or *recursive*, … meaning that data collection and analysis proceed in tandem repeatedly referring back to each other" (emphasis is as in original text) (p401)

Robson (2002) goes further, emphasising that:

> "… theory is 'grounded' in data obtained during the study particularly in the actions, interactions and processes of the people involved" (p191)

He describes how grounded theory is not only a strategy to be employed during research, but also a style of data analysis. These two descriptions of grounded theory have influenced my methodological approach.

It is not possible to approach a field of study with absolutely no pre-existing knowledge and assumptions. Bulmer (1979) challenges grounded theory on this basis, questioning the ability of researchers to put aside their knowledge of different concepts and theories. However, Strauss and Corbin recognise this and explain how a researcher's experience and knowledge enhance the strategy within a grounded theory framework:

> "Experience and knowledge are what sensitizes the researcher to significant problems and issues in the data and allows him or her to see alternative explanations and to recognise properties and dimensions of emergent concepts". (p59)

The methods used in Phase Two of this study are not difficult to locate within the grounded theory approach and the basic elements of theoretical sampling and constant comparison are identifiable. The use of methods within Phase One of the study are, however, less easy to locate within this tradition if perceived as a separate study in itself. In order to appreciate the influence of the grounded theory approach, the reader should consider the entire data set as being data from both phases combined rather than them being viewed as two separate data sets. The method of handling data in Phase One is not necessarily typical of a grounded theory approach but neither is it alien to it as I shall discuss below. In summary, the overall research strategy, in congruence with the flexible and emergent design of the study, is influenced by grounded theory in its broadest sense. The way data are handled in Phase One is less commonly associated

with this strategy, but handling of data in Phase Two is more closely associated with it.

Discourse Analysis

Phase One of the study draws on methodology from Discourse Analysis (DA) which involves detailed qualitative analysis of transcribed audio recordings of calls made to NHS Direct.

DA focuses on how identities, knowledge, power and social relations are constructed in spoken and written texts or discourses (Crowe 2005). Unlike conversational analysts, discourse analysts accept a wide variety of data including transcripts of talk from naturally occurring settings, institutional settings and non-naturally occurring settings such as contrived interview situations. As Silverman (2006) highlights, there is disagreement about a clear definition of what DA is. He cites Potter (2004) as providing the authoritative definition where the focus is on language as "the medium for interaction" which is explored through the discourse or the text.

I considered this definition to have some congruence with the key concepts that I wanted to explore within my research; the means by which nurses at NHS Direct make different use of the algorithms and organisational protocols to make decisions and give advice to parents with persistently crying babies and how this, and their interaction with callers, is affected by experience, knowledge and the institutional identity as provider of a triage/helpline service.

Potter (2004) builds on his earlier description of two key features essential to DA, described by Bryman (2004), as being particularly attractive to social researchers and adds a third. The features of anti-realism, constructionism and reflexivity embody the notion that reality and truth is not something that exists as a clearly defined phenomenon which the researcher will discover through DA, notions akin

to the positivist approach to research, but that texts reveal versions of society and culture which individuals select over time and through which they construct their own reality (Potter 2004).

Potter's three features reflect and relate to Gill's (2000) four themes associated with DA. These are:

- Discourse is a topic: not a means of revealing the reality of society and culture
- Language is constructive: discourse is a means by which a version of reality is presented and the choices made in presenting the construction of reality gives some insight into the nature of the individual who constructed it.
- Discourse is a form of action: which serves to accomplish tasks in how individuals express themselves, put their views across and prompt action.
- Discourse is rhetorically organised: whereby an individual construction of reality is one version among many others all of which compete to persuade.

Therefore, discourse texts do not represent truth or reality but individuals' versions which are "constituted by interpretation and cultural values" (Crowe 2005:57). This has particular resonance for me in considering the interplay of interpretations and beliefs and values that occur during the calls at NHS Direct. How these features come into play during the naturally occurring talk and the techniques used by the nurses and callers at NHS Direct are discussed in more detail in Chapter Two. Particularly useful to me in understanding the application of DA is Bryman's (2004:370) description of the device as being action-orientated:

> "DA is concerned with the strategies … [people] employ in trying to create different kinds of effect". (p 370)

In the context of my study, this translates to DA being concerned with strategies employed by nurses during calls in order to 'do' the business of NHS Direct and by callers, in order to get the response they desire from the nurse.

Parker (1999) describes how there is no single, fixed meaning for words and phrases and how their meaning depends on the way they are inextricably linked within a given context. The context in DA is therefore, essential and cannot be separated from the data as some traditional research methods attempt (Crowe 2005). In my study, the institutional context of NHS Direct is a fundamental consideration since it provides the basis for the discourse through the algorithms. Indeed, an algorithm as it appears on the screen can be used as a script. The fundamental importance of the context is emphasised by Fairclough (1992) who provides a definition for DA founded on the principle that discourse constructs and shapes experience and effects interaction with others. Particularly relevant to my study is the importance of considering how the context influences the techniques used in the practice of language and, crucially, how practice is shaped by it.

It is important to explore the texts/discourses that are central to nursing practice (Crowe 2005) and in the context of NHS Direct, that discourse is the transcript of the calls. Crowe echoes Taylor and White (2000) and highlights how analysis should consider 'politeness' strategies, the construction of subject positions and the types of language used. These and other analytical concepts are discussed more fully at Chapter Two and form the basis of the analytical framework applied to Phase One data.

The value of employing DA as a research strategy in nursing related research is powerfully presented by Crowe (2005) who concludes that examination of discourses that dominate and influence nursing practice provides an opportunity to identify oppressive and enabling nursing practice by revealing aspects of

practice and experience that other research methods may miss. She stresses its value concisely:

> "Discourse influences how we practise as nurses and how those for whom we provide care experience that practice". (p55-56)

The application of DA to a nursing context such as NHS Direct involves considering the effects of the discourse of clinical practice on nurse/caller interaction and relationship but also, importantly, how the discourse supports or undermines knowledge and belief systems. This has particular relevance to the issues relating to which questions NHS Direct nurses choose to ask, avoid or rephrase and is highlighted in Chapter Six. With this in mind, the DA techniques and resources are appropriate to offer explanations for some of the research questions and that the text/discourse under analysis also 'fits' the questions as the transcripts of taped calls are central to the work at NHS Direct. However, while I acknowledge that I draw a great deal on DA methods, I do not address the level of detail described by authors such as Bryman and Silverman, and do not consider different types of repertoire and rhetoric.

Ensuring rigour in Discourse Analysis

In addressing the questions of methodological rigour, Crowe (2005:61) asks if "sufficient resources [have] been sampled, eg historical, political, clinical". One could argue that the eleven calls sampled are not enough on their own to ensure any validity. As Robson (2002:170) points out, the very term 'validity' in flexible design research has been brought into question with some authors preferring terms such as 'credibility' and 'dependability'. However, as he further argues, to avoid such terms like 'validity' and 'reliability', which are common terms in fixed design studies, one runs the risk of providing:

> "… support for the view that qualitative studies are unreliable and invalid" (p 170).

Certainly in studies that have been carried out at NHS Direct since this study commenced, the number of calls sampled is typically in the hundreds. However, the aim of this flexible design research is not to produce statistical generalisability. As is typical of a grounded theory strategy, the sample of calls and of participants for the focus group is "theoretical" that is chosen to assist my role as researcher in formulating theory (Robson 2002).

As discussed above, both the chosen research method of DA and the actual text analysed are congruent with my research questions which are two vital features of establishing methodological rigour (Crowe 2005). The business of providing a telephone triage service and giving advice to strangers who can neither be touched or seen, only heard, presents a unique constellation of challenges. How the organisation configures its call sequence, how a suitable environment is prepared for the delivery of advice, how the interaction is handled by both nurse and caller and finally how the advice is given and taken are all important areas for analysis of NHS Direct call data which emerges from an added context of being driven by an algorithm defined process.

Thematic Analysis

Phase Two of the study involves the analysis of single focus group data using the approach of thematic analysis. Braun and Clarke (2006) argue that thematic analysis is a poorly branded method which is often used but never claimed and usually referred to as something else. They emphasize the advantages of thematic analysis as being flexible in both reflecting reality and in getting below the surface of reality. This latter description appealed to me particularly in my consideration of means by which to analyse focus group data. The approach used for data analysis is best described as latent constructionist in that it aims to identify the underlying concepts within the data and focuses on the realities and

structural conditions in which the account of the focus group is provided (Braun and Clarke 2006).

Although Braun and Clarke argue that thematic analysis should be viewed as a method in its own right, the way in which I have utilised the method is perhaps more akin to the viewpoint of Ryan and Bernard (2000), who locate it as a process that is performed within an analytic tradition such as grounded theory.

Ensuring Rigour in thematic analysis

The process of thematic analysis involves repeatedly examining the data from the focus group to find repeated patterns of meaning. Throughout the entire process the coding continues to be refined and developed. Once I had identified the codes, they were matched with the data extracts which demonstrates the code. This process serves to ensure rigour and validity as I found that some codes could not be matched to data extracts, and some extracts had been left uncoded. The next phase involves sorting codes into themes. However, this was the second phase of a grounded theory influenced approach, and the themes were already drafted from the analysis of Phase One data. It was the themes identified in Phase One that formed the basis of my focus group schedule. However, I was prepared to realise a new set of themes and did not feel that I was trying to adopt a deductive, top down approach to analysis, whereby I was attempting to fit the data into a pre-existing coding frame. The flexibility with which the themes were refined and affirmed is inherent within the thematic analysis approach (Braun and Clarke 2006) and for me, added to the validity of the process.

Braun and Clarke's description of the next phase of analysis, 'reviewing themes', concisely describes what I actually did:

> "During this phase, it will become evident that some candidate themes are not really themes… while others might collapse into each other…" (p 91).

This again involved re-reading the full transcription and checking that the themes were an accurate reflection and the codes were accurately included within the themes.

Interpretation

Robson (2002: 288) highlights an interpretative methodological problem of focus groups where lack of dissent is taken as consent. My interpretation of the data is very much contextualised within the call data analysis. Therefore, when there was no-one in the group who strongly asserted that they always asked the 'coping question', I considered this in the context of the call analysis data which indicated that it was not always asked when prompted; the lack of assertion was, therefore, taken as a reliable indicator. Coupled with this is the fact that each member of the group referred to how they would not ask the question directly as written.

Method

Early study design method and preliminary data collection.

At the initial stage of the study design, I decided to explore the opportunities that exist for different disciplines of nurses to intervene in helping parents to cope with persistently crying babies. For this reason the study initially employed a flexible, largely qualitative, emergent design with multiple methods of data collection and did not involve the use of matching or comparative methodologies. The study was to focus on the different referrals that came through different routes regarding persistently crying babies under one year of age. The different routes included A&E departments and NHS Direct calls. It was intended that this emergent phase of the study would inform the development of an intervention strategy.

Data collection began in 2002 when, for a period of four months, between June and September, data was collected from two A&E departments. Data collected was about children under 1 year of age who presented with 'crying' as the main reason for attendance at A&E and where no pathological illness or condition was identified as the reason for the crying. The reason for this focus was to try to gauge how frequently parents were so concerned about crying that they sought emergency advice and treatment. Over that period, 21 cases presented, the majority of which were self-referrals (that is were not referred by a GP or NHS Direct). Most presented outside office hours and did not require any treatment. The nature of the record keeping in the A&E records was extremely variable as was the nature of professional practice; some professionals spent time discussing how the parents felt whilst, in contrast, others checked that the baby was 'OK', then discharged home. Without actually observing these interactions it is pointless to draw too much from this. However, the data collection was a worthwhile exercise particularly in terms of orientating myself to the field of parent/professional interaction.

Pilot interviews took place with 4 volunteer parents of children under the age of one year. The purpose of the interviews was to try to establish how parents gained knowledge about handling babies and what they felt they wanted and needed from health professionals to help them to cope with the first year of their baby's life. The final interview was very powerful. There was much resonance with the literature and research about the opportunities that there had been, but missed, for a variety of health professionals to intervene and support the young man I was talking with. The perceived lack of interest by health professionals came through the interview in a startling manner, with apparently little concern at how this nineteen year old father, who several months before was finishing A' Levels and living at home with his parents, was coping with the massive change in his life circumstances.

I reached the decision that parental interviews would not be an efficient method of exploring the issue of professionals' responses in supporting and enhancing parental coping mechanisms to deal with crying, although the final interview did get nearer to that issue. I felt that there was potential to get nearer to the nature of professional response to parents with persistently crying babies through NHS Direct. However, my decision to concentrate solely on this service was not made until my data collection began.

Call Data

All calls at NHS Direct are recorded. As researcher, I did not listen to the calls 'live'. As part of the general call centre preamble, callers are informed that their call may be recorded for various purposes. This is a preamble commonly used and is something that arguably, would not put most people off speaking openly on a subject. As such, the data from recorded calls is uncontaminated from any researcher presence thereby providing rich and valuable data, a point since echoed by Richards et al (2002) who emphasise the depth of information and insight that can be gained from listening to audio taped consultations. The interaction and reality presented by the participants is natural.

The use of transcribed tape recordings is applauded by Taylor and White (2000) who articulate the appropriateness of applying DA methods to such data. The questions that these authors raise in relation to the role of the professional are embedded within my research questions:

> "How do they present themselves as credible professionals who speak authoritatively on behalf of their agency or profession? How do they demonstrate professional knowledge and expertise? How do they engage with service users? What devices do they employ in order to convey information?" (p98)

In drawing on DA, I constructed my own interpretive paradigm which is central to the data analysis. The tools and concepts used to construct the analytical framework are discussed in Chapter Two under the heading "Conversation and Advice giving in institutional settings: institutional talk". The particular aspects drawn from the relevant research in this area which were incorporated in the analysis framework include: the client's expectations and perspective; advice formats; boundaries between institutional and everyday talk; the use of empathy, paraphrasing and repetition; the implications and use of membership categories and the use of a variety of conversational strategies including narrative and detail; active voicing and extreme case formulation. These features provided the basis for the questions that form the analytical framework within which each call was separately considered. The questions listed in Figure 1(a) below:

Figure 1 (a) Analytical Framework

1. When does the coping advice appear and when does it not?
2. Do nurses give advice about coping outside of the medical framework of the algorithm?
3. Do parents overtly express their difficulties with coping and are there other pathways open to the nurse to successfully give coping information?
4. What is the affiliation and uptake – the degree to which the nurse and caller appear to agree with each other?
5. What are the expectations of the caller, are they seeking reassurance, do they want to be told to do something, are their expectations met?
6. Is the structure of the interaction supported by the algorithm or hindered by it?
7. What are the practical issues faced by practitioners?
8. Comment on the use of:
    - Assigning or implying membership categories
    - Narrative and detail
    - Active voicing
    - Extreme case formulations
    - Crossing boundaries between institutional talk and everyday talk.
    - Callers establishing moral adequacy
    - Nurses establishing institutional ID/collective institutional ID
    - Advice formats: institutional/passive voice or personal voice.
    - Is there professional detachment?
    - Empathy
    - Paraphrasing and repetition
    - Acknowledgements
    - Presence or absence of uptake markers.
    - AIS, advice-as-information sequence?

Detailed description of data analysis of the texts is given at Chapter 4 where I have included substantial sections of verbatim text to support my findings which serves to demonstrate how my interpretation has been reached. As an example, analysis of Call 5 shows how the nurse delivers her 'worsening advice' using the institutional voice as opposed to personal:

N: *…**it's** probably advisable….*
And
N: *… obviously call **us** back …*

Point 8 of the interpretive framework above is highlighted against the transcript of the call. Another example of how the interpretive paradigm above is used to draw out features from the call data is in Call 4 where the caller immediately gives a narrative, chronological, succinct expectation, clearly stated at the opening of the call.

C: *… we wanted to phone up to see if there was anything else we could do.*

Point 5 of the interpretive framework is highlighted against this element of the transcribed call.

Focus Group

Within the tradition and influence of a grounded theory approach, the themes that arose from the analysis of the call data at Phase One prompted the decision to further explore the experiences, opinions and beliefs of nurses in their use of the crying baby algorithm. The focus group was deemed an appropriate means to explore the opinions and experiences of NHSD nurses and their interaction as a group, their areas of agreement and disagreement and their sharing of ideas. Kitzinger (2005:57) describes the benefit of a group discussion over individual interviews:

> "Gaining access to such variety of communication is useful because people's knowledge and attributes are not entirely encapsulated in reasoned responses to direct questions".

The interaction in a focus group can reveal a different level of understanding and get beneath the surface of experience in a way that other data collection methods cannot always achieve (Barbour and Kitzinger 1999; Kitzinger 2005). However, Cronin (2001) disagrees and states that data from a focus group will lack the depth of information that could otherwise be achieved in individual interviews. If the interaction is what yields the data most suited to the research questions, however, then the focus group must be a preferred method of data collection over the single interview where interaction is limited between participant and researcher. Kitzinger (2005) maintains that focus groups are the preferred method of data collection for exploring how points of view are constructed and expressed. The focus on linguistic exchanges, construction and shifts of subject position that emerge from focus groups coupled with the action-orientated nature of the discourse, are highly congruent with my overall research strategy.

Sampling Issues

The sampling for the focus group was theoretical. The preference of some researchers to use pre-existing groups was not considered since I wanted to avoid established group dynamics that may be inherent within a pre-existing group. I could have chosen to use a clinical reference group whose role included the consideration of the use and development of the algorithms. However, this largely consisted of senior managers and practitioners and my focus was on the interactions and experiences of 'shop floor' NHS Direct nurses who worked with the algorithms on a daily basis.

As Cronin (2001) recommends, I gained my sample from asking someone to nominate participants. This was achieved by the Paediatric Lead Nurse at NHS

Direct issuing an open invitation to nurses to attend the focus group on a given date. Authors on the subject of focus groups vary slightly in their recommendation for ideal size of the group, but there are certain recognised disadvantages to having groups of too large a size for example participants feeling comfortable with *not* contributing (Morgan 1988; Latane et al 1979). My group included six participants, all of whom contributed, some more than others, but no-one dominated the entire discussion. The danger of one or two participants dominating a discussion presents a potential disadvantage to the use of the focus group as a means of data collection, added to which is the danger of the predomination of the extremist opinion and conflicts between participants (Robson 2002:285).

The make up of a group can have an important impact on the data. A group that includes different levels of 'rank' in an organisation may discourage those of a lower rank from expressing a view that disagrees with someone perceived as being from a higher hierarchical position. For this reason, and to avoid power imbalance in the group, I asked that all members of the group be of the same clinical nursing grade, with no managerial status or responsibility. This created a certain homogenous dimension to the group, but there were no pre-selected similarities in terms of length of experience, previous background, qualification, and age. I felt that this enriched the discussion and encouraged the group to consider different angles of the topics discussed (Robson 2002: 286).
Bryman (2004:349) clearly states that a single focus group is unlikely to meet the researcher's needs. Had not such a good mix of background and experience been achieved in my focus group, this may have yielded the need to undertake further focus groups. Whilst prepared to undertake further focus groups as part of the development of grounded theory, I did not feel it necessary following completion of the analysis. Indeed, I felt that the solo focus group met the four criteria highlighted by Merton et al (1988): range – of topic areas, specificity – reference to actual lived experience, depth – discussion of attitudes and beliefs, and personal context – where the social role of participants is taken into account

Coding and Analysis

Cronin (2001) recommends systematic coding as a starting point to analysis of focus group data. There are many authors who describe the process of coding, many based upon the work of Strauss (1987) and Strauss and Corbin (1998). Strauss emphasises the need for coding to be a process of exploding the data apart in ways that lead to further questions. Different authors suggest different starting points but all agree with Tesch (1990) who refers to qualitative data analysis as a means of decontextualising and recontextualising data in order to develop "pools" of meaning. However, Weaver and Atkinson (1994) warn of too much decontextualisation which runs the risk of not only losing the context of the data but also the meaning.

Initially, it was difficult to conceptualise how I progressed through the clearly identified phases described by most authors, since the process of reading and re-reading, constant comparison and overlaying different codes was yielding more confusion than organisation. However, Braun and Clarke (2006) emphasise the recursive nature of analysis which does not progress simply from one phase to another in a distinct linear fashion. The point at which data were recontextualised helped me to appreciate how the messiness of decontextualisation allowed a fresh view of the data which were prepared for further interrogation, whilst recognising that theorising was happening throughout the whole coding and comparison process (Braun and Clarke 2006). As Coffey and Atkinson (1996) highlight:

> "… the establishment of ordered relationships between codes and concepts is a significant starting point for reflection and for theory building from qualitative data". (pg 48)

Coffey and Atkinson describe three levels of generality in coding; general – which is described as corresponding with the focus of the questions in the interview schedule, intermediate and specific, both of which break down the data into further and further detail. These levels have similarities to those of Strauss and Corbin (1998) who describe three levels of open, axial and selective coding. I found their description of a variation of open coding, suited my style whereby, rather than analysing line by line, or by sentence or paragraph, I considered the entire document and asked:

> " 'what is going on here?'. Having answered these questions the analyst might return to the document and code more specifically for these similarities and differences." (p 120)

This process then provides the foundation for theory development (Strauss and Corbin 1998).

A tool that I chose to use across these different methods of analysis is thematic coding. A clear guide to using thematic analysis is provided by Braun and Clarke (2006). Braun and Clarke address key questions that can confound a novice researcher but which other authors take for granted for example, when is a theme big enough to be called a theme? They highlight how the importance lies not in how it can be quantified, but in the degree to which its importance to the research question is captured.

Thematic analysis is described as involving searching across the data set: -

> "… be that a number of interviews or focus groups, or a range of texts, to find repeated patterns of meaning".

I used the questions that formed the focus group schedule as my initial themes since they formed my units of analysis, but they were considered not only at the

point they were asked but where they overlapped and reappeared. This is deemed acceptable within the wider tradition of grounded theory given that the questions themselves were themes derived from another section of the data set. The themes differ from codes in that they are broader and the codes represent the organisation of data into smaller meaningful groups (Tuckett 2005). As Miles and Huberman (1994) state, coding is part of the analysis and individual extracts can be coded in as many different themes as they fit into (Braun and Clarke 2006). I certainly found this to be the case with some extracts coded once or many times.

During the recontextualisation, the guiding themes of the focus group schedule were amended. This ensured that, what Braun and Clarke (2006) refer to as the 'candidate thematic' map correctly reflects the evident meanings of the whole data set: that is making sure the themes 'worked' in relation to the data set.

An example from the data analysis is given below:

Theme one is identified as 'Use and differing use of algorithms'. Throughout the transcript of the focus group, sub-themes and codes are identified. The code 'clinical judgement/experience/knowledge appears in theme one under the sub-themes of 'personal, professional background and experience' and 'skill and accountability'. Different extracts of text will fall into either one or both of these sub-themes. For example, the following extract will fall into the 'skill and accountability' sub-theme:

> *…It's up to our clinical judgement now whether we actually ask every specific question.*

Whereas the following extract, under the same theme, will appear under a different sub-theme that is 'personal, professional background and experience':

…I just ask a wide berth question rather than specific so it's not pointing them to anything direct….I think it's from my own personal experiences

Ethical Issues

Ethical approval was sought from the Local Research Ethics Committee and granted on 10 January 2002 under 'Chairs Action' only on the basis that the research was considered to be more of an audit. There was a requirement for further approval to be sought from NHS Direct research governance body. This was sought and granted. All calls are recorded at NHS Direct and all users of this service are routinely informed that their calls are recorded and may be used for training, quality monitoring, research and audit purposes.

All data collection and transcription for Phase One took place on site and no caller or nurse identifiable information was removed from the site. All participants in the focus group in Phase Two were provided with participant information sheets prior to the event, and all participants were required to complete and sign consent forms. At no stage were any participants put at any physical risk.

In my capacity as researcher and also, at that time, Nurse Consultant for Safeguarding Children within the NHS, had I become aware of examples of practice which in my opinion put a caller or child at risk and was picked up through listening to the recorded call data, this would have been shared with the lead Paediatric Nurse and Named Nurse for Child Protection. At the start of the focus group, this information was also shared with participants.

It had been my intention to attempt to retrieve data from the NHS Direct Client Satisfaction Survey and establish level of satisfaction for those whose calls resulted in use of crying baby algorithm. However, the change in LREC requirements for NHS research would have necessitated applying for more approval. Changes in the NHS Direct Research Governance framework would also have resulted in working through a long and involved application process

which would have resulted in an unacceptable, and unprofitable delay in completion of the study.

An ethical dilemma presents itself in the use of recorded material for research purposes when acceptance of this is presented almost as a condition for continuance of the call right at the start of the call. It could be argued that, in agreeing to these 'terms', the caller is agreeing to being a potential research participant. It was not part of the remit of this study to consider what would happen if the caller refused to accept that their call was recorded for different uses or indeed, whether or not any caller had done so. In addition, it is worth considering if any other NHS service imposes the same 'condition'. However, one might also argue that NHS Direct is simply being transparent in a way that other NHS services are not. Content of records, case studies and statistics may be used anonymously for audit, research and training purposes in other parts of the NHS and the degree to which the individual service users are aware of this is debatable.

Chapter Conclusion

The early design phases of this study played an important role in developing my interest and understanding in the power of language, its use in professional practice and its impact on client/professional interaction. The value of this was a key factor in determining the methodological approach and techniques used in the different phases of the study once a decision to focus on NHS Direct had been made.

This chapter has described the underpinning methodological approach and influence of grounded theory in terms of, not only a strategy, but a style of data analysis which occurs in tandem with data collection and from which theory is developed. Within this broad analytical tradition, the chapter has highlighted how discourse analysis and thematic analysis, as means of handling data, are congruent with the study design. The study focus on interaction is especially

congruent with action orientated critical discourse analysis where strategies are used to achieve an effect and also where the context, in this case NHS Direct, influences these strategies and shape practice. The relevance of this in relation to Phase One data collection has been outlined.

The chapter has also outlined the flexibility of thematic analysis used in Phase Two of the study which serves to both reflect reality and to get beneath its surface. The application of thematic analysis on focus group data is discussed and attention drawn to the focus on linguistic exchanges, construction and shifts of position which are a feature of focus groups.

This chapter presents the rationale for the methodological approach to analysis. The action orientated nature of discourse analysis underpins the construction of the interpretive paradigm outlined in the chapter which is drawn from literature described in Chapter Two and which is applied to Phase One call data in the following chapter.

CHAPTER FOUR: Data Collection and Analysis (phase one)

Introduction

As discussed in chapter three, phase one of this study, the data collection and analysis from NHS Direct calls, draws on methodology from action-oriented discourse analysis involving a detailed qualitative analysis of transcribed audio recording of calls made to NHS Direct. This chapter will consider the data and analysis as a whole. In doing so, I have complied with the advice of Robson (2002:510) who warns against trying to separate data and analysis into different chapters in flexible design studies.

The previous chapter has described the construction of the interpretive paradigm from which the call data in this phase of the study (phase one) are analysed. It is important to reiterate that the particular analytical tools and concepts used are drawn from the relevant literature and described in Chapter Two under "Conversation and advice giving in institutional settings: institutional talk". The transcript of each call was considered and notes made on the analysis sheet (appendix 1) as to the recognisable presence of the features contained within the analytical framework. The transcript copy was marked to show where the features of the analytical framework appeared.

Early analysis of the data indicated that nurses use the algorithms differently. This led to a further interrogation of the data following the initial analysis that demonstrated the extent to which, and in what ways, the algorithms are used differently.

This chapter will present the initial analysis of the call data using the previously described analytical framework and extracts of verbatim text as examples of the

feature described. Each call is thus analysed separately and the features contained within the analytical framework are shown in bold and italics. The chapter will then reveal the second level of interrogation of the data and resulting analysis, whereby the extent and manner in which algorithms are used differently by nurses at NHS Direct are highlighted and examples, using verbatim text extracts, given.

The 'crying baby' algorithm.

The term algorithm is understood differently by different professional groups. For this reason I have replicated a portion of the algorithm below in order to try and clarify the process that nurses work through and that callers hear. It is not possible to go through all the different branches that represent the decision matrix that unfolds and so one cannot assume that these questions are asked exactly as they appear below, but I hope the following gives the reader some insight to the nature of the business at NHS Direct.

Following the opening sequence of a call Nurses are asked to select 'yes', 'no' or 'unsure' from the following questions. The number of questions depends on the caller's answers to the questions put to them. I have also given examples of some of the dispositions that are presented to nurses from which they have the ability to 'upgrade' to a higher level of urgency, or 'downgrade' to a lower level of urgency. As the nurse eliminates the most serious problems, the disposition is of a lower level of urgency.

The 'crying baby' algorithm quoted here is from the NHS Clinical Assessment System version no. 4.0.0.0 which was in use at the start of my study, but not at the end. At the time of the focus group in 2006, the version used was no. 15.0. I have presented the older version in the left hand column so that comparison can be made with the later version in the right hand column.

Table 1.1: Crying baby algorithms versions 2002 and 2006

Version 2002		**Version 2006**
Is your baby less then 3 months old?		Is the infant under 3 months old or is the infant under 6 months old and was born prematurely (born at less than 37 weeks gestation).
Is your baby breathing faster than usual?		Does the infant have any of the following symptoms: (lists breathing symptoms) A 'yes' here results in disposition of 999, ambulance asap. Dispositions now appear after all questions.
Does your baby have any of the following symptoms? (lists breathing symptoms) A 'yes' here results in disposition of 999, ambulance asap. Dispositions now appear after all questions.		Does the child have any of the following symptoms? (lists levels of consciousness symptoms)
Does your baby have any of the following symptoms? (lists level of consciousness and irritability symptoms, including 'will not be calmed …')		Does the individual have any of the following symptoms? (Lists skin appearance/rash symptoms)
Does your baby have any of the following symptoms? (Lists skin appearance/rash symptoms)		Has the infant had bile stained (green colour no yellow) vomiting?
Does your baby have any of the following symptoms? (lists dehydration symptoms)		Has there been any frank blood (not streaks) mixed with the infant's stools or in the nappy?)
Could your toddler have eaten or swallowed poison?		Has the child had an injury to the head in the past 72 hours?
Does your baby have a temperature or does you baby feel warm to the touch?		Does the infant have any of the following? (Lists level of consciousness, irritability, crying, feeding symptoms)
Has your baby vomited up more than twice?		Does the infant have any of the following symptoms? (lists vomiting, dehydration symptoms)
Has you baby vomited green or yellow material?		Does the infant have any of the following history? (lists prematurity, illness, congenital defects)
Has your baby refused the last 3 feedings in a row?		Does the child have a swelling or lump on either side of the groin?
Does your baby have a swelling or lump on either side of the groin?		Could a thread or hair have become wrapped around a finger or toe (or if male around the penis)?

Version 2002		**Version 2006**
Has your baby had any injections in the last few days?		Does the carer think that the child looks especially ill or feel extremely concerned by the appearance of the child?
Has your baby continued to cry even after trying to cuddle, rock or feed him or her for over 4 hours?		Could the infant have eaten or swallowed any poisons or toxic substances?
Could a thread or hair have become wrapped around a finger or toe (or if male around the penis)?		Could the infant have eaten or swallowed any poisons or toxic substances?
Does your baby have a red eye or are there more tears coming from one eye?		Does the infant have a temperature (over 38.3degrees C or 101F) or does the infant feel hot to touch?
Is there a swelling of an arm or leg around a joint?		Has the child vomited more than twice?
Could a pin or other sharp object in the baby's clothes or nappy be sticking into the baby?		Has the infant had projectile vomiting?
Does your baby have a wet-looking , shiny, red rash in the nappy area?		Has the infant had any injections or vaccinations in the last few days?
Do you feel so exhausted by the baby's crying that you feel you might hurt or shake your baby if the crying does not stop soon?		Has the infant continued to cry even after trying to cuddle, rock or feed for over 4 hours?
Does your baby seem to cry when having a bowel movement?		Does the infant have a red eye or are there more tears coming from one eye?
Have you noticed any blood after a bowel movement either on the stool or in the nappy?		Is there swelling or lack of movement of an arm or leg around a joint?
Does your baby nurse or drink fluids more rapidly than usual?		Does the infant have a wet-looking, shiny, red rash in the nappy area?
Has cows milk been added to your baby's diet?		Is the infant teething?
		Does the individual feel so exhausted by the infant's crying, that the individual may hurt or shake the infant, if the crying does not stop soon?
		Is the infant having fewer bowel movements per day than usual?
		Does the infant cry after breast or bottle feeding?
		Does the infant breast feed or drink fluids more rapidly than usual?
		Has cow's milk been added the infant's diet?

At the risk of oversimplifying the process and misleading the reader, I have included the dispositions that both versions yield following a response to the 'coping question'. One must bear in mind that other information given during the call will also be taken into account in reality.

There are interesting differences between the use of language in the different algorithm versions. For example, the 2002 version is more like a script that the nurse can read out loud and uses the first person referring to 'your baby' as opposed to the 2006 version which refers to 'the infant'. The latter seems more like a prompt to ask a question rather than a script. In the 2006 version there is more use of medical terminology for example, 'frank blood', 'projectile vomiting' and greater specificity for example, the 2002 version question is: "Does your baby look sick to you" and the 2006 asks "Does the carer think that the child looks especially ill…"

A caller's response to the question **Do you feel so exhausted by the baby's crying that you feel you might hurt or shake your baby if the crying does not stop soon** In the 2002 version will yield the following dispositions:

- YES – Contact Health Visitor *and* "The information given during this call has given rise to concerns that abuse or violence may be involved and may be a child protection matter. Consult the Child Protection Protocol".
- NO – Contact GP Practice within 12 hours (same day)
- UNSURE – Contact GP Practice within 12 hours (same day)

A caller's response to the question **Does the individual feel so exhausted by the infant's crying, that the individual may hurt or shake the infant, if the crying does not stop soon** In the 2006 version will yield the following dispositions:

- YES – Speak to primary care services – Emergency "The symptoms described during this call suggest that the individual concerned should discuss them with a GP practice as soon as possible" *and* "The information given during this call has given rise to concerns that abuse or violence may be involved and may be a child protection matter. Consult the Child Protection Protocol"
- NO – Refer to primary care services – Same Day "The symptoms described during this call suggest that the individual should contact the GP practice within the next 6 hours"
- UNSURE – Speak to primary care services – Emergency (as above)

There is certainly an upgrade of level of urgency in response to a 'yes' from the caller in the 2006 version with regard to liaising with the primary care team. The 2006 version also recognises that other professionals, other than the health visitor, may need to be contacted. Both versions direct consultation of the child protection protocol. The 'no' response in both versions should yield a referral that same day. This is a different disposition to 'home care' which yields a much lower level of urgency and recommends to the caller that the problems concerned can be managed at home. If the 'coping question' is asked, whatever the caller's response, it should yield a referral of some sort unless it is downgraded by the nurse.

Data Collection: Phase One

A retrospective sample of calls was taken from a single NHS Direct site during October 2002. The decision aid software used at the site was CAS. Since that time CAS has been updated to version 10. However, on checking through the algorithms, little of the information relating to crying baby has been changed other than the generic rephrasing from the first to the third person as outlined in Chapter Two. Calls were taken from August 2001, December 2001 and May 2002. I selected calls from the computer generated lists of call information and used the following selection criteria:

Calls where:

- The crying baby algorithm was used for babies aged one year and under.
- The final disposition was either 'contact health visitor' or 'home care'
- The geographical origin was from a large metropolitan area in West Yorkshire

The reason behind this selection criteria is that the question about how parents are feeling come quite far down the algorithm when medical emergencies have been eliminated. Therefore, selecting calls of a higher level disposition would have been unlikely to have reached the level where the 'coping question' was asked. The disposition of 'contact health visitor' follows a 'yes' response to the 'coping question' when asked at the time of data collection (version 4.0.0.0 of CAS). The age range was selected based on research regarding patterns of crying behaviour in infants and also, incidents of children having suffered abusive head trauma.

The selection criteria amounted to numbers of successfully retrieved calls as outlined below:

Table 1.2: Summary of calls selected and criteria

	Dec 01	**Aug 01**	**May 02**	**TOTAL**
Crying Baby Algorithm Used	157	109	126	392
Selected by age.	114	92	79	285
Selected by 'final disposition'	42	26	12	80
Selected by area	7	5	3	15
Retrievable	5	4	2	**11**

Successfully retrieved: 11

(4 calls were either not located or inaudible due to tape damage).

The calls were transcribed verbatim and anonymised on site. The reason for selecting from different months was simply to avoid picking up 'crying baby' calls which focus on a particular seasonal childhood complaint for example, there is typically a rise in respiratory problems in children under one year of age during the winter months. Each season potentially has its own associated rise in different complaints which could add to parents' stress. Rather, I felt a selection of calls, using the same inclusion/exclusion criteria across different times of the year would maximise the potential for achieving a good sample in a very resource restricted study. I make no claims that the sample is representative and this is not a requirement or intention of grounded theory strategy. Neither do I claim that the findings are generalizable. In common with other flexible design methods, DA yields subjective interpretations which cannot be entirely divorced from the researcher's own values (Crowe 2005).

Call Data Analysis

Call No. 1

Figure 1 (b) Summary of Call 1:

This call very much follows the sequence described by Zimmerman for emergency calls. The caller presents opportunities to discuss her uncertainties as a new mother. The algorithm prompts the usual soothing advice:

> "Run the vacuum in the next room or place the baby where he or she can hear the clothes dryer. Steady rhythmic sound ("white noise") will help soothe the baby (background television or radio may help)"

This algorithm prompt to give soothing advice could have been a potential pathway for the nurse to discuss coping but was not asked and no other ***coping advice*** was given. During the interrogative sequence of the call, the nurse receives minimal response tokens. The caller responds with ***narrative and detail*** when the nurse returns to the agreed focus of the call.

The nurse uses ***paraphrasing and repetition*** at an early point in the call:

C: *…she's only taken 10 oz when normally she's taking 5 oz every 3 – 4hours*
N: *She's only taken 10oz when she'd normally take 20 – 25 in total?*

She reassures caller by giving ***advice as information*** regarding babies' normal temperature and the caller responds with ***marked acknowledgement***:

N: *Well that's absolutely fine actually, babies temperatures can go up to about 38 and that would be considered quite normal for them.*
C: *Oh really?*

The caller uses ***active voicing*** to give a sense of what really happened in the interaction between herself and the midwife, thus qualifying her 'right' to feel unhappy:

C: …When I mentioned it to them all I got from the midwife was, "It's because she's sat in a car seat". Well she's hardly ever sat in her car seat, she just happened to be in her car seat that day because I'd just changed her nappy and I wanted to go and wash my hands…

The caller has previously highlighted on one occasion that this is her 'first baby', but is also anxious to portray herself as being adequate and capable in providing the best care for her baby. She clearly portrays herself as having her baby's interests at heart ***- moral adequacy*** – and repeats the fact that this is her first baby towards the end of the call. The Nurse encourages the caller to talk by using ***paraphrasing and repetition***, trying to gain the client's perspective.

The ***caller's expectation*** is not clearly expressed, and the nurse begins to move into an interview format to try and gain the client's perspective, asking questions from the algorithm framework, receiving the expected minimal response tokens from the caller. In response, the nurse introduces a couple of examples of crossing from ***institutional talk boundaries to everyday talk*** coupled with ***paraphrasing*** in one instance:

N: …they're hot little creatures, bless them!
AND
N: She's been sleeping through? Good, You're being spoiled aren't' you? (Laugh)

The Nurse 'telegraphs' the process she intends to follow by stating that she is going to ask the caller a lot of questions now as part of an assessment of the child. Before moving into this specific sequence, the nurse first checks she has established a shared alignment and achieved a degree of ***affiliation and uptake*** by asking:

N: It is just today you've been a bit concerned about her because she's not feeding as she normally does?

The caller responds with a positive response token and the call moves into the interview format proper, framed almost entirely by the algorithm.

After 16 turns of the interrogative sequence/interview format the caller seems to want to bring the nurse back onto the subject of the wheezing which she highlighted as an earlier problem but not the point of this call. The nurse had established that feeding was the problem not breathing. The ***affiliation*** and shared alignment previously agreed seem to have been lost, enhancing potential for communication difficulties. However, the nurse successfully returns the caller to the issue of feeding by apparently linking it with the breathing and a discussion about wheeziness and mucous suction at birth ensues, and from there the nurse carefully gets back to the interrogative sequence of the algorithm:

N; Is the soft spot on her head alright?
C: Like it should be apparently.
N: What's her mouth like, is it dry, pink …?
C: Yes its pink.
N: So she looks fine to you?
C: She looks absolutely fine.
N: Does she get upset when she's filling her nappy?
C: No, it's just like she can't breathe properly, like she's wheezy
N: Was she mucousy as a baby?

The caller responds with some detailed narrative as she does when the nurse is discussing what the caller perceives to be the problem. The nurse then carries on with the rest of the algorithm sequence having re-established agreement and ***affiliation*** and within seven turns, the nurse is firmly back to discussing breathing.

The nurse speaks with the ***personal voice*** and actually asks to listen to the baby's breathing over the phone. She reassures the caller using the ***personal voice*** (relevant words highlighted in bold)***:***

N: ***I*** *couldn't detect any pauses, but she does sound a bit snuffly to* ***me*** *… **I'm** not unduly concerned about her…*

There is one other example of the ***personal voice*** after this, the rest of the time the ***institutional voice*** is heard from the nurse. After the long algorithm interrogative sequence, the nurse gives ***advice as instruction/information*** and repeats the instruction to call the health visitor (as recommended by the final disposition) on 4 occasions, on one of these occasions using the ***personal voice*** (relevant words highlighted in bold):

N: ***I*** *want you to contact your HV tomorrow*

The ***institutional voice*** is again prevalent during the issuing of the 'worsening' advice:

N: ***We're*** *here 24 hours a day … you can ring* ***us*** *back"*
And
N: *Any problems at all ring* ***us*** *back OK?*

During the call there is a brief example of ***empathy and boundary crossing*** between ***institutional and everyday talk***.

Call No. 2

Figure 2 Summary of Call 2:

In both the previous call and this call, the callers seem to 'turn off' midway through the interrogative sequence and reward the nurses with more than a minimal response when they are back 'on the point'. This call presents an example of how a caller is encouraged to revisit their stated expectation by the nurse providing space for narrative and detail throughout the call rather than only at the beginning. Advice about coping with reflux is given without algorithmic prompt or request from the caller showing how the nurse adds to the algorithm. This advice is greeted positively by the caller. However, the caller issues coping alerts and presents opportunities for the nurse to give advice about coping with crying, but these are not utilised by the nurse.

At the beginning of this call, the caller states that she wants to know if a prescription of medicine could have a negative effect on her 6 week old baby. The question is very clear and direct. The nurse encourages ***narrative*** in order to seek the caller's perspective and reach a shared alignment and ***affiliation*** which she does successfully:

N: Why what's been happening when you've been giving it?

This question may be intended to help the nurse out of the difficult situation of disagreeing with a medical colleague (that is the prescriber). However, since the nurse is clearly not concerned with this later in the call and comments, "…doesn't always help them, it doesn't work basically…" it's more likely to be the case that the question is a means of finding the starting point for the algorithm.

The caller reframes her concerns making reference to the baby 'screaming in pain' and the nurse encourages further ***narrative*** with ***paraphrasing*** and

repetition. The caller uses extended chronological description of events that she thinks is taking place. There is a sense of ambiguity about her description as if she's querying the relevance of the screaming, vomiting and the fact the baby won't lie down. The caller goes into great detail about how the vomit is brought up and swallowed back down.

The nurse responds by adopting a ***personalized advice interview format*** and only offer ***advice as information*** when the caller has gone into detail and there is ***agreement*** about the nature of the problem. The algorithm prompts the nurse to give advice about soothing, and it is given after a fashion, without request.

After the interrogative sequence, the nurse re-raises the issue of prescription medication prompting the caller to ask the question stated at the opening of the call; should she keep giving it (will it be having a negative effect). This prompts the nurse to respond in a similar way as previously, basically reaffirming that it does not work and would not harm NOT to give it.

When the nurse starts to give advice about ***coping*** with reflux, and getting baby to sleep, she gets a ***marked acknowledgment*** from the caller, then the nurse returns to the interrogative sequence. Following this, the nurse launches into a long ***'advice as information sequence'*** (AIS) which receives no response tokens from the caller. Advice on soothing is couched within this sequence but no attempt is made to assess the uptake of the advice. The final sentence ends with a direct answer to a critical question:

> *N: I wouldn't give any more of [prescription drug] until you've had word with her [HV] if it made him that much worse".*

In this call there is clear ***professional detachment*** in the sense that there is no ***empathy*** and ***boundary crossing between institutional talk and everyday talk***. That said the ***advice format is personal*** as opposed to passive or institutional (relevant words highlighted in bold):e.g:

N: ***I'm*** *not saying it actually harms them..*
And
N: **I** wouldn't give him any more…

Although explicit ***expectations*** of the caller is a straight answer to a straight question, the caller's use of ***narrative and detail*** implies an uncertainty and ambiguity and a need to know how to help her child stop being sick and sleep. When the nurse touches on this subject, she receives a marked acknowledgement. When the caller is describing how the crying gets worse at night, there's an opportunity there for the nurse to steer away from seeking a diagnoses and discuss the normality of crying and seek the alignment from which to create a favourable environment for giving relevant ***coping advice*** but no coping advice is offered.

Call No. 3

Figure 3 Summary of Call 3:

This call shows two different approaches by two nurses in response to one caller. Nurse 1 addresses the caller's concerns about coughing whilst providing advice and support in relation to soothing and coping with a crying baby. As call handler she quickly establishes there is no emergency and intervenes to the point where caller and children are calm. Use of the algorithm, as a steer to the conversation, is minimal and there is much evidence of empathy and offers of coping advice. Although the caller's stated expectation relates to the coughing, Nurse 1 responds to that explicitly stated problem and the more implicit problem that this caller is struggling to cope with a crying baby. After seeking agreement with the caller that this is the main problem and when, after following the nurse's advice the caller has succeeded in calming both children, Nurse 1 leaves the call.

Nurse 2 tries to progress through the algorithm, but is hindered by the lack of shared alignment, ***affiliation and uptake*** which she repeatedly tries to establish and about which the caller is apparently ambiguous. In common with other calls, the caller attempts to pull the subject back to her stated reason for the call, during the interview format/interrogative sequence of the call. Coupled with the background noise, attempts at logically progressing through the algorithm are repeatedly interrupted, the caller's coping ability decreases resulting in rejection of the nurse's advice to call later leaving the nurse with apparently no further resources at her disposal to deal with the call, which is then put on hold.

The call opens with sheer panic expressed in the voice and expression of the caller. Two nurses handle the call, the first is a call handler whose role is normally to take down details so that another nurse can call back.

The nature of the interaction with caller and nurse 1 is instinctive, with examples of ***everyday talk, personal voice and institutional voice*** as the nurse establishes that the baby is breathing. She then focuses on the caller *coping.* Nurse 1 spends a lot of the call integrating ***everyday talk*** among institutional ***talk.*** She still manages to 'do' the institutional business for example, establish the state of the child's immediate health, it's breathing, and establish that the caller needs ***coping advice*** and reassurance:

N: The worst of it is that if you get yourself in a knot they get into a worse knot.
C: Yes

Nurse 1 gives ***advice on coping*** without establishing a shared alignment and ***affliation*** as to the nature of the problem. However, the caller responds, not through talk, but by apparently interacting with her child as instructed by Nurse 1; she can be heard making the gentle shushing noises. The ***caller's stated expectation*** is alarming in its apparent clarity: the child is coughing, wheezing, screaming "all the time" and she wants reassurance, asks whether or not she should call an ambulance, and wonders if the baby is choking.

Nurse 1 can hear the excessive and persistent crying in the background and gives advice on calming and rocking. When the crying abates a little, she establishes that the baby is still breathing and continues to give calming advice whilst asking questions. On 3 separate turns the caller re-states her concern re: coughing whilst the nurse tries to encourage other coping strategies (for example, getting baby to suck on finger). In addition, the nurse gives direct response to the concerns about coughing:

N: It's because he's screaming so much

When Nurse 1 is satisfied that the environment is calmer, she starts to take the necessary details. The Caller sounds calmer, the children sound calmer. The call handler would not normally progress through the algorithm, but Nurse 1 does so up to a point, perhaps to be in a position to reassure and calm the caller.

There is an implication in the language of ***membership categories*** by Nurse 1, whose use of ***everyday talk*** suggests she has put the caller into a 'young mum' category and herself in 'older wiser' category with the associated power balance:

C: Can I just put the phone down one second…
N: You can darling that's OK.
Then
N: Alright my love OK, can I just take your name?

Towards the end of the sequence, the Nurse clarifies the alignment through the ***personalised empathic*** approach:

N: You've got a little one who's very upset haven't you?

Nurse 1 then informs the caller she's putting "crying baby" as the problem and reflects with the caller how the baby sounds happier, again using ***empathy***. The Nurse confirms the point of her actions in the notes that she records on the computer and also records the point at which she, as call handler, has ceased progressing through the algorithm.

<u>NURSE 2</u>

Nurse 2 opens the call by reflecting where the previous nurse left off that is the baby crying. Perhaps this, as an opening, implies a lack of seriousness to the caller or implies she is somehow less of a parent by not being able to calm her baby?

In response, the caller returns to the coughing and wheezing and choking description but finishes by explaining she can't settle the baby. This time, the ***caller's expectation*** although ambiguous, seems to indicate further reassurance and meeting the need for the baby to be settled.

Nurse 2, in contrast to Nurse 1, asks the caller if she can put the baby down when he starts crying. Nurse 1 advised the caller to hold the baby close and calm him down. Nurse begins the interview format of the algorithm sequence. The caller begins to explore the beginning of a narrative sequence, but, in pursuing the answers to progress through the algorithm, Nurse 2 seems to inhibit further narrative:

C: He's on Nutramigen milk. He's on … he's … to be honest, they've been useless with me, they've put him on that and said he's allergic to something, but I don't know what to and it's just a nightmare, you know. He's been on Ventolin for asthma but I don't know if he's on asthma ….
N: so he's on Ventolin then?

The caller attempts to engage in narrative again:

C: But I haven't been giving it to him because they haven't said if he has asthma or not and I thought, well I'm not just pumping him with medicines because they've just sort of left me.

This presents an opportunity for empathy and establishing an agreement, but Nurse 2 concentrates on trying to confirm a diagnosis of asthma and a prescription of Ventolin. The conversation is difficult because of the crying baby in the background:

N: So your GP diagnosed asthma then?
C: No, they didn't diagnose asthma, she gave me Ventolin medicine and said it might be asthma it might not be.
(crying starts again).

Nurse 2 tries to concentrate on the 'allergy' issue, but the caller seems to give this less importance. She does, however, indicate to Nurse 2 in her reply that 'screaming' has been a longstanding problem. She indicates that others have implied she falls outside normal mother ***membership category:***

C: I think the Dr thinks I'm an over anxious mother.

The caller is establishing ***moral adequacy*** at one level by explaining how she has consulted different professionals. She is also indicating at a more covert level that her consultations have been prompted by the baby's screaming. This in itself should be valid, but professionals have been seeking to 'cure' the screaming through medical interventions whereas Nurse 1 gave calming/soothing/**coping advice**.

A suggestion of the caller's wariness of being assigned a deviant from the traditional 'mother' membership category is the manner in which she repeatedly 'flits' from the 'crying' as the main problem and the 'coughing' problem. Whereas, Nurse 1 seemed to recognise this and deal with it but continue to focus on coping, Nurse 2 seems confused by it but does return to the 'crying' as the point of the call:

N: OK, he keeps crying

The caller states:

C: I just don't know what to do ….I mean he's six months old now, he should be …

Listening to the call, the researcher can hear the caller's ability to cope diminish in the tone of her voice, unfinished sentences, and exasperated tone.

At this point, Nurse 2 could potentially capitalise on this to concentrate on helping the caller cope with the crying. However, Nurse 2 chooses to return to the algorithm, with no overt established agreement or ***affiliation***. As with other callers, after several turns of interview format questions, the caller tries to bring the nurse back to the 'coughing' issue. Unlike other callers, however, there is use of the algorithm without established agreement:

C: He's been fine till this coughing.

At this point, Nurse 2 suggests the caller call back when she's managed to calm down the screaming baby. As this is potentially the covert 'real' reason for the call and because it takes several attempts at Nurse 2 trying to make herself heard over the noise the caller rejects the advice:

C: He'll be like this when you ring back

Nurse 2 tries empathy again, then puts the caller on hold. The algorithm prompted Nurse 2 to ask the 'coping' question. However, it was not asked and he Nurse indicated a 'no' on the computer in reply to the question.

Call No. 4

Figure 4 Summary of Call 4:

In direct contrast to the previous calls, adherence to the algorithm's interrogative sequence in this extremely business like call seems to help rather than hinder the progress of the call. The nurse manages the call maintaining an institutional focus and ***professional detachment***. Although soothing advice is not prompted by the algorithm, it is briefly referred to by the nurse. The 'coping question' is not prompted by the algorithm.

In the ***advice as information*** sequence at the end of the call, the nurse unusually gives the caller worsening advice before the actual advice! The nurse talks about not waiting till morning if the baby does not settle, and to ring the GP requesting an urgent visit/appointment if he develops problems with his breathing. This comes before recommending the parents call the GP the following morning. The algorithm final disposition does not recommend calling the GP, but recommends home care with worsening advice being to ring NHSD back. The nurse has upgraded the final disposition.

At the opening of this call the caller needs no prompting or encouraging and immediately gives a narrative, chronological, succinct expectation, clearly stated:

> *C: … we wanted to phone up to see if there was anything else we could do.*

This call is quite typical of Zimmermans's Emergency Call sequence. The caller is the child's father and the environmental situation is quickly established as there being the child's mother nearby as the caller is heard referring back to her.

This call differs from calls 1 – 3 in that there is no ***paraphrasing***, ***boundary crossing*** or ***empathy*** present in the almost exclusively ***institutional talk*** which exhibits clear ***professional detachment.***

There is only one example of ***repetition***, towards the end of the call which pre-empts the nurses closing ***advice as information*** sequence. During this sequence, the nurse gives soothing, ***coping*** information in a different way, couched within a covert agreement that the parent is aware of coping/soothing methods:

> *N: If he's not settling off when you're rocking him or cuddling him, he needs to be seen tonight don't wait till morning.*

Up to this point, the whole of the call is framed around an interrogative sequence in interview format. The caller's ***uptake markers*** are good, generally offering a little context without prompting apart from minimal response tokens of 'yes' or 'no':

> *C: No, no rash at all*
> And
> *C: Yes they've been fine*
> And
> *C: No, nothing like that*

The algorithm sequence is adhered to throughout and seems to keep the call moving whereas in previous calls, elements of it seemed to be regarded as irrelevant and callers wanted to 'get back to the point'.

The closing ***advice as information*** sequence includes ***personal voice*** format:

> *N: … what **I** would do is call your GP…*
> And
> *N: **I'd** make an appointment with your GP*
> And
> *N: **I'm** here all night, so if you want to call back **I'm** here while 8 o'clock*

Call No. 5

Figure 5 Summary of Call 5:

In common with calls 1 to 3, this call is typified by a long interrogative sequence greeted by minimal response tokens from the caller. The caller reveals a degree of frustration towards the end of this long sequence, which is, again, in common with earlier calls. The interrogative sequence is completed by a lengthy 'advice as information sequence' which does not include soothing advice or coping advice (and is not prompted by the algorithm): the lack of advice in this respect is governed by the fact that, when the nurse called back, the baby had clamed. The caller is advised to call back if baby becomes inconsolable again.

At the opening of the call the caller states their expectation: although the baby is now calmer, the caller wants to make sure the baby's 'screaming' was not "something else".

The format is virtually totally interview format. Within three turns, after having confirmed biographical details, the nurse begins a long interrogative sequence. There is very little in the way of encouraging ***narrative and detail***. The caller seems happy with this. There is no advice resistance but there is a spark of frustration after a long sequence of the interview format/interrogative sequence and largely "yes/no" answers to questions:

N: Looking at her does she look poorly?
C: Well I'm not a Dr.
N: Compared to how she normally looks, does she look OK?
C: She's not as content as she normally, usually is, that's all I can say you know, I can't ….

Within four turns, the nurse asks the caller to confirm the original problem:

> *N: when you were feeding her was she crying then, was she refusing to take the feed?*

The caller's response is more detailed than earlier in the call and the previous reference to the baby's behaviour. 'Screaming for hours' has now become 'crying'.

As with other calls, the nurse delivers her 'dispatch' advice as information sequence at the end of the interview format/ interrogative sequence. The voice is ***institutional***:

> *N: …**it's** probably advisable….*
> And
> *N: … obviously call **us** back …*

No soothing or ***coping advice*** is given. The coping question does not appear even though a male caller is expressing concern about his nine week old baby "screaming for hours". There are two examples of ***institutional and everyday talk boundary crossing***, where the nurses ***personal*** voice is heard:

> *N: Sorry, **I've** set her off again now haven't **I**?*
> And
> *N: Oh dear, you're going to have problems consoling her now, sorry about that.*

There is one example of ***empathy, paraphrasing and repetition***. The presence of ***uptake markers*** are limited to the caller's last turn:

C: Super, thanks, bye

The caller mainly gives minimal response tokens typical of interview format.

Call No. 6

Figure 6 Summary of Call 6: At the beginning of the call the caller seemed open to talking about help with coping and signs of colic. The interview sequence, although short, receives the same minimal uptake markers as previous calls. In common with previous calls, the caller seems clear about her expectation but this becomes less clear as the call continues. She states her question early in the call, this is answered quite promptly, but the caller continues the dialogue by indicating some problems with coping. The nurse then makes a thorough attempt to explore this further and provide coping advice. However, when this becomes overt, the caller seems determined to, again, focus solely on colic. This being the case, the nurse has still offered coping advice and established a degree of coping ability during the call.

The nurse in this call exhibits ***empathy*** and ***boundary crossing between institutional and everyday talk*** right from the beginning of the call. In the caller's first turn there is a clear expression of what expectations are:

C: …we just want to know what the signs of colic are ..,.

Coupled with a clear and overt expression of ***coping*** difficulties or a coping 'alarm':

C: … we're having a bit of a tough time of it lately.

The nurse encourages further ***narrative***, then quickly establishes an ***agreement*** and ***affiliation*** and starts to answer the question:

N: … colic usually happens early evening as you're describing.

The nurse uses the algorithm in a different way to other nurses in calls 1 – 5 and avoids long interview sequences. However, the nurses receives ***no uptake marker*** when, after a short interview sequence she highlights the normality of what the caller is describing:

N: This is typical it really is

The caller goes straight into a ***narrative*** about how her routine goes 'to pot' in the evening and how, with a toddler as well, this is the worst time. The nurse has answered the question, has given information and picks up on the caller's repeated, if light hearted, expressions of ***coping*** difficulties, by recommending she speak to her HV. The caller ***rejects*** this advice because the HV is not available. The nurse responds with the ***personal voice***, saying the HV has more experience and repeats advice to the speak to the HV, buts adds advice to go to the chemist. The nurse tries empathy and starts to edge towards ***coping*** advice more than advice about colic, which she has given:

N: … there's nothing worse than a colicy baby but there's no way you can console them…

The caller goes into a bit more ***narrative***, reflecting the nurses information regarding the baby's behaviour and repeats her advice to call the HV.

The nurse repeats the HV advice and the chemist advice again, then recommends ringing helplines from a book the caller says she does not have. The nurse tries to overtly move towards ***coping*** at the end of the call mentioning cuddling and rocking, giving advice in the form of a question:

N: when you cuddle and rock her does it stop?

The nurse seems to be making an attempt at assessing coping ability and probably does not feel the need to directly ask the 'coping question' as is prompted by the algorithm because the caller responds with:

C: *… it's certainly not driving us mad yet.*

The nurse tries to explore this line further and makes a genuine attempt at understanding the context, but this is not responded to at all by the caller, who ignores the question completely:

N: *when it gets to be every night, you're waiting for it then aren't you, and you get uptight yes?*
C: *So I'll give my HV a ring and see what she says.*

The conversation has returned to the colic. The call ending shows some good humoured boundary crossing and the nurse gives the last bit of information, clearly heralding it's source as being from the computer.

Call No. 7

Figure 7 Summary of Call 7:

The use of the algorithm in this call is hardly prevalent with only two out of a possible nineteen questions asked directly. The nurse has reassured herself that baby is well, and has perhaps correctly identified the new parents' underlying need for reassurance. She makes some attempt to raise the topic of anxiety with the caller, but falls short of assessing ability and knowledge of coping strategies The information is given as advice. The caller is given much reassurance and some coping advice however. The normality of this situation with a new baby is highlighted and the offer to call back at any time strongly made using the personal voice.

The nurse in this call types into the notes section of the screen, which is not typical from the sample of calls taken. The notes state:

"Family have just arrived home from hospital at 4pm. Child is breastfed and is settling at the breast but not settled for long without the breast. Dad wanted to know if a dummy would help. Baby is alert, pink and warm no other problems".

This note explains why the algorithm sequence in this call is so short. It might be that this nurse's experience tells her that these new parents are seeking reassurance as well as wanting straightforward advice about using soothers or dummy's to calm their baby. The nurse explores this using ***empathy*** by saying:

N: … I think you're a little bit anxious when you first…

She received a marked acknowledgement from the caller, almost confirming that she's 'hit the nail on the head':

C: Absolutely yes.

Within the first few turns the nurse has assessed the caller's underlying expectation, confirmed it, given advice relating to the stated expectation and asked a couple of algorithm questions. The algorithm prompts the coping question but it is not asked, even though the caller is male. The algorithm questions are integrated into the interaction to confirm the nurse's assessment that the baby is well. The nurse gives advice about using the soother as requested using the ***institutional*** voice:

*N: What **we** normally suggest is…*

The nurse goes onto express ***empathy*** and give ***coping advice*** and uses the ***personal voice***:

*N: **I** think really T, tonight and probably tomorrow night you're going to have quite a tough night OK **I'm** being honest with you because there is no miracle cure for this.*

There follows an advice as information sequence which receives a marked acknowledgement from the caller. Apart from the callers first turn, there has been very little in the way of encouraging ***narrative*** and response from the caller, whilst positive and marked, is sparse.

The nurse ends by reiterating twice the fact that caller can ring her back and gives her first name again to the caller which he reflects by using her name as the call ends:

C: Alright G, thanks

Call No. 8

Figure 8 Summary of Call 8:

This call is another example of the interview/interrogative format of the algorithm being used in a long sequence with little space offered for narrative and detail. It is not followed by a substantial 'advice as information sequence' as in other calls, but by the caller seeking agreement about what he perceives the level of disposition should be; that is A&E rather than GP. No coping or soothing advice is offered and no reassurance is given to the caller. There is a strong sense of professional detachment during the call and an implication of disbelief and irritation by the nurse at the caller's use of extreme case formulation and later, at his resistance/rejection of her advice. This is more apparent in the tone of her voice which obviously cannot be replicated here, rather than in the words used. Although the caller did not overtly identify problems with coping, his use of extreme case formulation and overt expression of concern indicates a level of anxiety and consternation which is not explored further. The coping question is not prompted, even though the caller is a male concerned about the persistent crying of his baby.

This caller immediately uses ***extreme case formulations*** as a conversational strategy, perhaps to get his point across and to get a reaction. The reaction from the nurse sounds like disbelief both in terms of tone and words:

C: .. he's been crying for the past 2 weeks
N: For the past 2 weeks?

This statement from the nurse is more than reflecting what the caller has said: it is disbelief. The caller expresses frustration, perhaps because he's been to the GP who has found nothing wrong with the baby. The caller uses ***active voicing*** and more ***extreme case formulation*** in his interaction with the nurse, clearly expressing his unwillingness to accept the GPs diagnoses that the baby is 'fine':

C: He went to Drs yesterday He said 'it's fine, it's fine'. But we're worried about him, he's not fine. He's got some pain in his legs. He won't drink or sleep.

The nurse struggles to establish any sort of ***agreement or affiliation***. The baby's crying can be heard in the background. The nurse ***paraphrases*** the callers use of ***extreme case formulation*** to describe it:

N: And he's been crying like this constantly for the last two weeks?

The caller responds with another ***extreme case formulation***:

C: Yes. He hasn't been sleeping for day or night.

The caller uses ***active voicing*** again later in the call to describe the advice from the GP which he has rejected:

C: Oh he said 'he'll get better, he'll get better' you know what they're like.

It takes a while before the nurse embarks on the interview/interrogative sequence, perhaps because of the lack of shared alignment**.** However, when it does begin it is long with no encouragement or space for ***narrative and detail***. In contrast to previous calls of this nature however, the caller responds with more detailed ***uptake markers***:

N: Is he weeing OK, are his nappies still wet?
C: Yes he's weeing OK
N: What's his colour like. Does he look any different than normal?
C: No he looks normal.
N: Has he got a fever at the moment?
C: Yes he's got a fever and flu.
N: Has he been sick?
C: No he hasn't been sick.
N: But you say he's not been feeding as he normally does.?
C: No

N: Is he refusing feeds or is he just not taking as much?
C: He's just not taking as much.

No soothing or coping advice is indicated or offered, and the 'coping' question does not appear.

By the end of the call, all the nurse has established is that the baby has a temperature as reported by the father. She gives advice about bringing down the temperature and then gives 'worsening' advice which is to call the GP if baby remains unsettled after an hour.

The caller implies rejection or resistance of advice by suggesting calling the GP as being dispreferred, and would rather take baby to A&E. He seeks the nurses approval for this action, but she handles his rejection of her advice by restating it, emphasising the institutional voice. However, with the persistent rejection of her advice the nurse uses the personal voice and an audible irritation creeps into her voice. The call ends abruptly with advice being rejected, and the caller continuing to justify his chosen course of action by trying to get the nurse to agree with him:

C: What if I went down to the casualty?
N: That's entirely your choice, if you want to take him to A&E take him down there. ***We*** *can only advise you what to do.*
C:: No we will take him to the casualty.
N: If you want to take him, you take him, but ***my*** *advice is to ring the Drs.*
C: Shall I take him now then?
N: If you want to take him, you take him, but you need to give him some Calpol before you take him down there if he's got a temperature otherwise he's going to get worse. Alright?
C: Alright. (rings off)
N: Thanks
CALL ENDS.

Call No. 9

Figure 9 Summary of Call 9:

Despite the lack of clearly stated expectation by the caller and a lack of shared alignment, this call is an example of the nurse using short algorithm driven interview/interrogative sequences, allowing the caller space to talk in between and encouraging narrative and detail. From the calls sampled, this is the only call where the nurse asks, where prompted, the coping question, albeit slightly reframed. The nurse adds to the algorithm prior to asking the single question in the crying baby algorithm about parental level of coping ability, by asking how the caller feels. The caller seeks reassurance and is given it along with coping and soothing advice, both from within and outside the framework of the algorithm.

The nurse in this call immediately shows ***empathy*** and ***crosses boundaries between institutional and everyday talk***, using the ***personal voice*** on hearing the sound of the crying baby. The caller states her 'alarm' and highlights at the beginning of the call that's she's on her own. This is put forward as a problem. The caller establishes ***moral adequacy*** by listing the things she has tried to sooth the baby but the nurse makes no attempt to deal with this until she's finished taking all the details:

This call is unusual because there is a lack of ***stated expectation***. The baby is clearly heard crying, the caller implies that teething may be the problem, but there is no overt ***shared alignment*** prior to the initiation of the algorithm other than the obvious, but unconfirmed problem of a baby crying, cause unknown:

C: … this is not normal to cry so much.

The nurse allows the caller the opportunity to use ***narrative and detail*** in between short algorithm driven, interrogative sequences. The nurse also responds to the caller with ***empathy***:

C: … Oh God…
N: Don't worry, I know it distressing when their crying is …
C: It's awful…
N: … and you can't really find out what the cause is.

This seems to be the point at which something of a shared alignment is reached. It's followed by the caller giving overt expressions of struggling to cope within the short ***narrative*** sequences:

C: … I'm so exhausted…
And
C: I've had three weeks of being on my own and I'm completely without any help.
And
C: … I have nobody, absolutely nobody. I'm at the end of my tether I've not been well. It's grim.

Following this expression, the nurse diverts the conversation back to the baby, as prompted by the algorithm. At her suggestion that the baby might have picked something up and swallowed something he shouldn't have, the caller's tone becomes emphatic in reasserting herself as a responsible mother, again claiming ***moral adequacy***:

C: No, no, because I mean he's watched very carefully…

The longest algorithm driven interview/interrogative sequence comes to fourteen turns at the end of which the coping question is prompted. Before asking it the nurse adds her own question, turning her attention to the caller:

N: How do you feel?

The tone of the caller's voice seems to suggest this question has come as a bit of a surprise who responds with:

C: Me?

When the caller was talking about how she was feeling, the nurse diverted her to questions about the baby. Diverting the caller back to talking about herself after a series of questions about the baby seems an odd thing to do, but is entirely algorithm driven. However, the interaction does not appear to suffer as a result of this apparent intrusion and the caller responds with:

C: Totally exhausted.

The algorithm question re: coping is reframed by the nurse:

N: Right., OK. You don't feel like you're getting to the stage where you'd give him a good shake?

The reaction of the caller is again emphatic.

C: Oh god, no, no…

But she goes onto confirm to the nurse again that she would behave as a responsible parent and shows her knowledge:

C: … I mean I know what to do – I'll just go to another room.

With the algorithm sequence completed, the nurse acknowledges that teething seems to be the problem with the baby and warns the caller that she's in for a bad night. There then follows a conversational sequence where the ***institutional*** identity is less prevalent and where the nurse offers coping advice and suggestions ***outside of the algorithm***. The caller is responsive to this. At one stage the nurse speaks entirely from personal experience, ***crossing boundaries from institutional to personal talk*** and mentions how she used to take her

baby for a drive in the car when he would not settle. Taken as advice, this is emphatically rejected by the caller:

> *C: I just can't do that, I'm just too exhausted. I just can't physically do it …*

This is the fourth overt expression of limited ***coping ability***. The Nurse responds by ignoring and concentrating on the fact that, she can hear, the baby has become more settled during the course of the call. The caller is reassured by this and the nurse prepares to end the call using the ***institutional voice*** to invite call back if the baby becomes unsettled again. The caller seeks final reassurance that the nurse thinks the problem is teething, which the nurse acknowledges and adds ***empathy***:

> *N: .. the thing is, when you get upset, they get upset.*

The caller responds with a marked acknowledgement:

> C: That's making sense actually.

The nurse repeats her invite to call back with ***institutional voice*** and the call ends, the peace and quiet almost palpable!

Call No. 10

Figure 10 Summary of Call 10:
This call is an example of interaction which is entirely driven by the algorithm questions and is again typified by little narrative and detail, space for the caller to talk and no offer of coping or soothing advice. However, the ability for anything other than a straightforward question and answer session is, arguably, limited by the level of background noise created by the crying baby. This obvious practical problem is clearly a difficult one to overcome, but an opportunity to explore the impact of the recognised distressed child on the parent is apparently not utilised and the coping question not asked.

The Caller's ***expectation*** is implied rather than stated. She mentions that the baby is teething a little bit, but refers to her screaming as:

C: … not normally like this at night time.

The nurse expresses ***empathy*** on hearing the crying:

N: … Oh she is distressed isn't she…
And
N: … oh she sounds so distressed…

Very little takes place in the way of ***narrative and detail*** but the level of background noise is clearly inhibiting any conversation. The nurse goes through the complete algorithm interview/interrogative sequence, only interrupted by the need to repeat a question because it hasn't been heard, or asking for the reply to be repeated. During this long sequence, the nurse receives minimal uptake markers. The 'coping question' is not asked, but is prompted by the algorithm.

The call ends with advice as information sequence and worsening advice. The nurse ends with ***empathy***, using a ***personal voice crossing the boundary from institutional talk:***

N: OK love, good luck!

Call No. 11

Figure 11 Summary of Call 11:

This is a different use of the algorithm which is very clearly aligned to the institutional identity of the organisation. Despite the long interview/interrogative sequences, the sequences are broken by the nurse's explanation of the rationale behind the question and the caller is allowed space to talk and narrative and detail are encouraged. The nurse assesses coping ability without boundary crossing and whilst maintaining professional detachment. However, there is little empathy expressed and no coping or soothing advice offered. Despite this however, the caller takes reassurance from the interaction

The caller issues a ***coping*** alert by the fifth turn:

C: … sorry I'm a bit tired

She uses much ***narrative and detail*** to express the child's symptoms, persistent crying and the affect it's having on her and her partner:

C: … we're starting to wear a bit thin
And
C: we just start falling asleep ourselves

The nurse introduces a short piece of the algorithm, receiving minimal response tokens, then clarifies the ***agreement*** of what the problem is:

N: So it's really just the crying and you're not sure why it is he's crying?
C: Yes

The nurse uses very little ***empathy*** and has very clinical approach, using ***institutional*** voice exclusively throughout the call with no examples of ***boundary crossing between everyday and institutional talk*** exhibiting a degree of ***professional detachment***. She prepares the caller for the use of the long algorithm sequence:

> *N: OK, I'll just go through some more questions, really see if we can find anything we might have missed.. bear with me a minute.*

The last phrase almost acknowledges that the following process may be experienced as tedious by the caller.

The long ***interview/interrogative*** sequence receives minimal response tokens. The nurse differs in her approach to other nurses in the sample of calls in that she occasionally provides an unprompted rationale for the question being asked. on :

> *N: We're just looking for signs of dehydration….*

The caller is allowed plenty of opportunity to use ***narrative and detail*** but is interrupted by the child actually vomiting and the caller going to her partner's aid in dealing with the situation. Another ***coping*** alert comes from the caller following this episode:

> *C: It's with it going on for several hours and we're both getting a bit…*

The nurse then enters into long 'advice as information sequence' about feeding following vomiting and preventing dehydration. The caller hardly responds through this, then issues another ***coping*** alert:

> *C: He's my first child and I haven't got a clue.*

The nurse then informs the caller about the algorithms, again unusually, clearly drawing the callers attention to the fact that she has a list of questions and is going through them to make sure she is not missing anything. At the point the algorithm prompts the 'coping question', the nurse explores the caller's feelings and coping ability by adding to the algorithm and avoids directly asking the 'coping question':

N: Do you feel a bit happier…?
C: I feel happier with him being sick…
N: You're going to be able to cope with him tonight and feel happy just to see how he goes?

The caller does not respond directly but describes what they are going to do and implies that she is reassured that the problem is that her child has eaten something that has upset him. She apologises for having bothered the nurse who responds with a clear ***institutional voice***:

*N: No you're not bothering **us**, that's why **we're** here.*

Summary of Analysis

Through a process of analysing how the crying baby algorithm is used by nurses at NHS Direct, by reading and re-reading of the data, referencing each call against the call analysis sheet and summarising and comparing the summaries of each call, it emerged that the algorithm was used differently. As per grounded theory approach, this led to further analysis which revealed three distinctly separate uses of the crying baby algorithm by nurses at NHS Direct. They are:

1. Direct use of the algorithm – where the whole exchange is clearly driven by the algorithm. (6 calls)
2. Adding to the algorithm – moving in and out of the algorithm and allowing the caller space to talk. (4 calls)
3. Covert completion of the algorithm – all questions asked but not overtly. The algorithm does not govern the exchange.(2 calls)

(Call 3 involves two nurses both using the algorithm entirely differently and is thus labelled 3a and 3b, hence the reference to twelve calls from a sample of eleven!)

Table 2: Summary of calls

Category	Call 1	Call 2	Call 3a	Call 3b	Call 4	Call 5	Call 6	Call 7	Call 8	Call 9	Call 10	Call 11
Direct use of the algorithm	Yes			Yes	Yes	Yes			Yes		Yes	
Adding to the algorithm		Yes					Yes			Yes		Yes
Covert completion of the algorithm			Yes					Yes				
Is the coping question prompted?				Yes			Yes	Yes		Yes	Yes	Yes
Is the coping question asked?										Yes		
Is coping advice given?		Yes	Yes				Yes	Yes		Yes		
Is soothing advice given?		Yes	Yes		Yes		Yes	Yes		Yes		

The following section shows a presentation of the data under the three categories identified. It identifies the key features from the discourse which are common to each category which are:

1. Callers expectations/seeking shared alignment to the problem.
2. Use of algorithm
3. Conversational strategies.
4. Advice giving

Each category is then summarised and attention drawn to common features. This section is important in developing understanding of the different ways in which the organisational business of NHS Direct is achieved for this small group of callers.

Category 1: Direct Use of the Algorithm.

Table 3: Summary of calls in category 1

Category	Call 1	Call 3b	Call 4	Call 5	Call 8	Call 10
Is the coping question prompted?		Yes				Yes
Is the coping question asked?						
Is coping advice given?						
Is soothing advice given?			Yes			

1. Caller's expectations/Seeking shared alignment to the problem.

NHS Direct calls follow a similar opening sequence to those in emergency call centres as described by Zimmerman (1992), whereby callers, are allowed some space to talk and state their expectation. Heritage and Sefi (1992) show that working to establish this shared alignment to a problem is associated with the degree to which the caller/client responds to the advice given. This part of the call, is crucial to creating a favourable environment for advice delivery (Silverman 1997). However, establishing a shared alignment depends, on some degree, to the clarity with which the caller states their expectation and on the nurses skill in interpreting what that is.

In call 1 the stated expectation of the caller (C) is not absolutely clear even though the nurse (N) allows the caller space to talk. The clearest indication of an expectation is:

> *C: So I was just a bit concerned about her breathing.*

The caller seems to be seeking reassurance. In contrast, In call 4, without prompting, the caller immediately gives a chronological and succinct narrative, followed by a clearly stated expectation:

> *C: … we wanted to phone up to see if there was anything else we could do.*

The caller is still seeking reassurance that they are doing everything they can, but this is much more clearly expressed than the previous caller. The caller in call 5 is similarly clear about their expectation from the call, but there is less clarity from the caller in call 10.

In Call 3b the second nurse is handling the call and has picked up, from the first nurse, notes on the computer screen which read:

"Caller initially distraught, but have managed to calm her. Baby is 6 months old and toddler of 18 months who was also crying. Mum in quite a state".

On making contact with the caller, Nurse 2 tries to establish a shared alignment. By this time (inside ten minutes of the end of the previous nurse interaction) both children can be heard crying loudly again in the background. When Nurse 1 completed her call, she agreed with the caller that she would put on the computer that the problem was 'crying baby'. However, when Nurse 2 tries to agree this with the caller, she does not make the same agreement.

N: Details I've got is that the baby's crying. Is that right?
C: It started off with him coughing.

The coughing was the original concern with Nurse 1, but the caller was reassured by Nurse 1's input and agreed that the crying was now the problem. It might be that by opening with this statement, the caller interprets Nurse 2's statement as suggesting she, as mother, cannot cope with her baby's crying, thus exhibiting behaviour outside of, what might be described by Sacks (1972) as a standardised relational pair. This might explain why she then returns to the more tangible problem of coughing. However, at the end of the short explanation, she returns to the fact that she cannot settle the baby and describes the baby's behaviour as 'screaming and screaming'. This is not an example of extreme case formulation, the baby can be heard doing exactly as the mother describes.

Nurse 2 in Call Three is struggling with the background noise to establish an agreement with the caller, and quite possibly is being affected herself by the volume of the baby's crying as she asks the caller to put the baby down.

The calls in this category tend not to allow space to re-establish the expectation during the call and are generally not leisurely.

2. Use of algorithm

The calls in this category are typified by long interview/interrogative sequences. The calls are then generally 'packaged' with an 'advice as information sequence', final disposition and worsening advice. In call 4, the nurse gives the worsening advice before the actual advice, but this is not typical. During most of these calls, the callers are given very little opportunity to use narrative and details, particularly within the interview/interrogative sequence.

The long interview/interrogative sequence is typically greeted by the caller, with minimal response tokens and uptake markers and several callers reiterate their stated expectation during the sequence as if trying to return to 'the point' thereby implying uncertainty as to the relevance of the questions e.g in call 1, after a long series of interview format questions, the caller seems to want to bring the nurse back onto the subject of the breathing concerns which she highlighted earlier as a potential problem:

> *C: No, it's just like she can't breathe properly, like she's wheezy.*

Again, call 4 is unusual in that the direct use of the algorithm seems to move the call along rather than hinder the interaction, and receives generally positive response tokens offering a little context without prompting.

> *C: No, no rash at all*
> And
> *C: Yes they've been fine*
> And
> *C: No, nothing like that*

This call is also unusual in that it is the only call where the nurse overrides the final disposition. The algorithm final disposition recommends home care with the worsening advice being to call back if necessary. The nurse has stepped up the final disposition and advises the caller to contact his GP.

More typical of this category is call 10 where the nurse goes through the complete algorithm interrogative sequence, receiving minimal uptake markers of mainly 'yes' and 'no'.

3. Conversational Strategies

Since the calls in this category are typified by little narrative and detail, there are limited examples of caller's conversational strategies, the main ones being use of claiming/establishing moral adequacy, active voicing and extreme case formulation.

In call 1, the Caller uses active voicing to describe the interaction between herself and the midwife. She uses reported speech in an attempt to add authenticity to her story and, as Taylor and White (2000) put it, "giving a strong sense of 'this is what really went on' …".

> *C: …When I mentioned it to them all I got from the midwife was, "It's because she's sat in a car seat". Well she's hardly ever sat in her car seat, she just happened to be in her car seat that day because I'd just changed her nappy and I wanted to go and wash my hands…*

In addition, this caller exhibits moral adequacy and clearly portrays herself as having her baby's interests at heart (Taylor and White 2000).

The lack of encouragement of narrative and detail is found in call 3b, where the nurse interrupts the callers narrative:

> *C: He's on Nutramigen milk. He's on … he's … to be honest, they've been useless with me, they've put him on that and said he's allergic to something, but I don't know what to and it's just a nightmare, you know. He's been on Ventolin for asthma but I don't know if he's on asthma ….*
> *N: so he's on Ventolin then?*

In an attempt to establish moral adequacy, this caller lists the different professionals she has contacted. During the two halves of the call, the caller swings between two stated expectations, one being the baby's crying the other being the baby's coughing episode. This may be a strategy to attempt to ensure that she is not seen as 'deviant' by not being able to cope with the crying. This seems to confuse the nurse handling this part of the call, in contrast to the nurse handling the first part of the call, who dealt with both issues at once.

Call 8 presents the caller's use of extreme case formulations. Extreme case formulation is a conversational strategy that can be used to add emphasis and authority to what is being said in an attempt to 'legitimise' the point that is being made (Pomerantz 1986). Taylor and White (2000) explain how terms such as 'best', 'worst', 'always', 'never' are a feature of this strategy. The Caller in Call 8 immediately exaggerates the length of time the baby has been crying, perhaps to get his point across and to get a reaction. The reaction from the nurse however, sounds like disbelief both in terms of tone and words, rather than simple repetition and reflection of what the caller has said.

C: … he's been crying for the past 2 weeks
N: For the past 2 weeks?

The caller goes on to use active voicing and more extreme case formulation in his interaction with the nurse. However, the callers use of extreme case formulation to emphasise his point does not help the nurse as she works through the algorithm, using paraphrasing to ensure she understands the nature of the problem. The caller apparently contradicts himself within a few turns, at first stating the child is 'OK' when he's picked up, then stating that he cries when he is being rocked, although he might not be referring to holding the baby whilst rocking him:

N: Is it mainly on a night that he's crying or all the time?
C: All day and all night
N: What's his breathing like?
C: His breathing's fine. When you pick him up he's OK, but when you put him down he starts crying.
N: So he wants to be cuddled all the time?
C: Yes.
N: And does he settle off when you cuddle him or rock him or feed him?
C: Rocking him, he still cries

There is no pattern of use of either personal or institutional voice by the nurses in this category. Frequently, both are used during a call, although the institutional voice seems preferred for the 'worsening advice'. For example, in call 1, the nurse gives advice as instruction/information and repeats the instruction to call the health visitor (as recommended by the final disposition) on 4 occasions, on one of these occasions using the personal voice:

*N: **I** want you to contact your HV tomorrow*

Then using the institutional voice again to issue the 'worsening' advice:

*N: **We're** here 24 hours a day … you can ring **us** back"*
And
*N: Any problems at all ring **us** back OK?*

Call 10 is unusual in that the nurse signs the call off using a personal voice and crossing the boundaries between institutional and personal talk:

4. Advice Giving

As can be seen from Tables 2 and 3, no coping advice is offered is any of the calls in this category and soothing advice offered in only one call. An example is

in call 1 where the caller presents opportunities to discuss her uncertainties as a new mother, and the algorithm prompt to give soothing advice presents an opportunity for the nurse to discuss coping. However, this opportunity is not utilised.

There is a clear example of advice resistance in call 8. By the end of this call, the nurse has managed to establish that the baby has a higher than normal temperature. She gives advice about bringing down the temperature and then gives 'worsening' advice which is to call the GP if baby remains unsettled after an hour. The caller implies resistance to the nurse's advice by suggesting calling the GP is a 'dispreferred' action, and he would rather take baby to A&E. Silverman (1997) describes this implied resistance as being far more common than outright resistance and describes the 'dispreferred action format' as the method in which this resistance is normally achieved, as is the case in Call 8:

N: What you need to do is give him some paracetamol, strip him off to get his temperature down because often they can become quite irritable if they've got a high temperature. Give it an hour, OK?
C: Then what?
N: To help get the temperature down, see if the pain goes away. If he's still unsettled an hour after the Calpol, he's still crying, you need to contact your emergency Dr on call if he's still like this.
C: If they do come, the Dr., they don't look properly.

The caller seeks the nurses approval for this action, but she handles his rejection of her advice by restating it, emphasising the institutional voice to start with but transferring to the personal voice as the sense of irritability between nurse and caller builds:

C: What if I went down to the casualty?
N: That's entirely your choice, if you want to take him to A&E take him down there. We can only advise you what to do.
C: No, we will take him to the casualty.
*N: If you want to take him, you take him, but **my** advice is to ring the Drs.*
C: Shall I take him now then?

N: If you want to take him, you take him, but you need to give him some Calpol before you take him down there if he's got a temperature otherwise he's going to get worse. Alright?
C: Alright (rings off)
N: Thanks.

The call ends with the nurse's advice being rejected and the nurse refusing the provide support for the caller's preferred course of action.

As mentioned above, the algorithm driven calls in this category are not 'leisurely' and the environment inappropriate for giving unprompted advice on coping (Silverman 1997:152). As Silverman (1997) highlights, attempts to do so may lead to advice rejection. In addition, advice about caring for babies, in common with advice about sexual behaviour, can be interpreted as imposing a moral category on the caller and can, again, lead to advice resistance (Heritage and Sefi 1992, Silverman 1997). There is an attempt by all nurses in category one to delay advice until the client's perspective has been obtained (Maynard 1991) but with varying degrees of success.

I had intended to measure caller satisfaction within this study but was unable to gain ethical approval. However, the question remains central, as to whether the method of communication whereby the nurse ploughs through a long series of questions is welcomed by the caller. In category one, two of the nurses herald the fact they are about to run through a long list of questions but this does not seem to assuage the apparent frustration of the callers.

Another typical feature of the calls in this category, which may explain the lack of coping and soothing advice offered, is that there are no overt expressions of coping difficulties or coping alerts from the caller. This may be due to the pace of the call and the lack of opportunity or encouragement for the caller to express themselves using narrative and detail. Arguably, in terms of fulfilling the 'triage' function of NHS Direct, this type of call interaction is all that is required and

enough information is gained to assess appropriate level of service to which the caller can be directed. However, the same may not necessarily be said when considering the 'helpline' function of NHS Direct.

Category 2: Adding to the Algorithm

Table 4: Summary of calls in category 2

Category	Call 2	Call 6	Call 9	Call 11
Is the coping question prompted?		Yes	Yes	Yes
Is the coping question asked?			Yes	
Is coping advice given?	Yes	Yes	Yes	
Is soothing advice given?	Yes	Yes	Yes	

1. Caller's expectations/Seeking shared alignment to the problem

As in category one, the callers in category two do not always clearly state their expectation, presenting challenge to the nurses in providing advice to which the caller responds favourably.

Call 2 is an example of a clearly stated expectation and shared alignment achieved at a very early point in the call:

N: What seems to be the problem?
C: He's been very sick and I've taken him to the Drs today and they gave him some Gaviscon. He thinks he's got a bit of reflux. I've just given him some Gaviscon and I was just wondering if it might have a negative effect at all?

The nurse answers this question directly at the end of the call:

N: I wouldn't give any more Gaviscon till you've had a word with her (HV) if it made him much much worse.
C: OK then. Thanks.

In contrast the caller in Call 6 presents an almost dual expectation indicating what she expects from the call:

C: … we just want to know what the signs of colic are …

But also an overt expression of coping difficulty, or what might be termed as a 'coping alert':-

C: … we're having a bit of a tough time of it lately.

The nurse responds promptly to the colic orientated expectation and attempts to deal with the more covert expectation regarding coping. The response of the caller is to exhibit some degree of resistance to the coping advice by returning to the topic of colic. One could speculate that, as with caller in 3a and 3b, seeking medical advice about one's child is an assertion of moral adequacy, whereas, indulging in discourse about coping difficulties, may be regarded as falling outside of the normal mother/child relationship. However, the nurse addresses both overtly and covertly stated expectations.

Although the caller in Call 9 does not clearly state an expectation, her alarm and concern are very apparent at an early stage in the call:

N: (establishes spelling of child's name, can be heard crying in background, establishes details) She's crying isn't she (sounds concerned)
C: Yes I know, I've never had this before.
N: OK, How long has she been like that.
C: He's a little boy. I would say for the last 20 minutes. He's teething and I looked at his front gums and the two front big teeth are coming through.
N: But you've never had this before.
C: No and I'm very alarmed about it. The other problem is that I'm on my own.

Rather than trying to establish further clarity, the nurse is content to work with this as an expectation. The end of the call is an example of how the caller has followed the nurse's advice to good effect:

N: He's settled a little bit now. Try propping yourself up in bed and see if you can do that.
C: Yes, I'm actually lying on the settee now with my back up against the side of it and he seems to have settled with that.

In clear contrast to the nurse in Call 9, the nurse in Call 11 seeks absolute clarity as to the caller's expectation:

N: So it's really just the crying and you're not sure why it is he's crying?
C: Yes

The child himself seems to settle the outcome of this call by vomiting and then stopping crying and settling during the call!

2. Use of Algorithm.

The calls in this category are not dealt with in quite the same structured way as in category one. The calls all reveal examples where the nurses add to the algorithm in different ways, thus interrupting the interview/interrogative sequence, then returning to it. There are some long sequences of algorithm but generally

these are broken up as in Call 11, by explaining the reason for the question, and in Call 2 by giving advice in the middle of the algorithm sequence. This compares with the more structured configuration of the call sequence in category one which follows that described by Zimmerman far more closely and where advice is 'packaged' at the end of the call rather than offered throughout it. However, the callers in Category one did not issue any coping alerts early in the call as did the callers in category two. The nurse in Call 6 avoids using long sections of algorithm completely and the nurse in Call 9 uses a long sequence of algorithm driven questions after allowing an exceptionally substantial space for the caller to talk.

The pace of the calls in this category is more 'leisurely' than in the algorithm driven calls in category one. However, this is not a reflection of the 'institutional' nature of the calls which is highlighted in section 3 below (Conversational Strategies).

In Call Two the nurse starts to give advice about coping with reflux, and getting baby to sleep, in the middle of the interview/interrogative sequence. Unlike the calls in category one, the nurse does so without any encouragement from the caller, and she receives a clear response token as a result.

N: If you've found you've given a dose and it's not done any good or made things worse, it won't harm the situation not to give it. Really with babies with reflux they try these things and the Gaviscon doesn't often work. It's not often a treatment that used in hospital for children with reflux although the GPs will sometimes try it as a first port of call because what it does do is neutralise the acid, but it's not always effective. There are things you can be doing, like keeping him in a more upright position. I know it's difficult for a little one but, have you got a bouncy chair?

C: Yes he has got a bouncy chair. He doesn't seem to like it but we have one you can make more upright so we could try him in that. We've got him in his car seat at the moment because he seems to like it. Is he alright to sleep in that?

The nurse then returns to the interrogative sequence.

In Call 6 the longest interview/interrogative sequence involves three questions. Apart from two other examples of a single direct algorithm question being asked, this Nurse takes her answers from the narrative given by the caller. At the end of Call 6, the Nurse, after having attempted to explore the coping context, returns to the subject of the colic and informs the caller that the information source is from something she has in front of her, clearly introducing the 'computer' as part of the interaction:

> *N: Oh, I've just got some information up here that says that gastric distension or a trapping of an air bubble is more apt to occur if the infant is placed in the supine position ….*

As mentioned above, in Call 9, similar to Call 6, the nurse allows the caller the opportunity to use narrative and detail in between short algorithm driven, interrogative sequences. The caller is allowed space to talk and narrative and detail are encouraged. Despite the distressed baby heard in the background, the pace of this call is relaxed as the nurse adds to the algorithm as she explores parental coping ability and provides advice. The algorithm is still present but, despite the lack of shared alignment in this call, the nurse receives detailed uptake markers to her algorithm questions:

N: You haven't noticed any lumps or anything anywhere, when you've changed his nappy you haven't seen a lump in his groin?
C: I haven't actually looked to be honest.
N: OK, I just wondered if you'd noticed at all.
C: No, I probably would have done because I was putting that sudocreme on quite thoroughly because he's got a bit of nappy rash.
N: OK, no swellings round his arms or legs or his joints at all?
C: No, no.
N: but you think he has got a bit of nappy rash.
C: Sorry? Yes he has, he has. Someone said they can get that when they're teething as well.

In contrast the nurse in call 11 uses longer sequences of algorithm and receives minimal uptake markers. However, the sequences are broken by describing the task in hand at several points, for example:

N: OK I'll just go through some more questions really, see if we can find anything we might have missed. I'll just write this down, bear with me a minute.
C: It's alright.

Within one or two more turns, these interruptions in the interrogative/interview sequence allow space for the caller to talk and provide narrative and detail.

3. Conversational strategies

In all the calls in this category, the caller is allowed space to talk and the use of narrative and detail is far more prevalent. There is less variety of conversational strategies used by the callers in this category than in category one with assertions of moral adequacy being the most prominent. However, with the exception of call 2, the other three calls in this category all contain expressions of coping alerts.

In call 6 the caller describes the 'rough time' they've been having with their newborn second child. The caller's use of narrative and detail in Call 6 is not, as Taylor and White (2000) describe:

"… to persuade others of the plausibility of our account in the face of their disbelief…" (pg 67).

The nurse has answered the question about the signs of colic and later in the call goes on to verify this further by stating that the caller's description is "typical".

However, the caller enters into further detail about her routine going 'to pot' in the evening and issues further coping alerts.

The caller in Call 9 expresses overt coping alerts midway through the call, for example:

C: … I have nobody, absolutely nobody. I'm at the end of my tether, I've not been well. It's grim.

In Call 11, the caller issues a coping alert by the 10th turn. She uses a lot of narrative and detail to express the child's symptoms, persistent crying and the affect it's having on her and her partner throughout the call.

C: … we're starting to wear a bit thin
And
C: we just start falling asleep ourselves

There is no commonality in the conversational strategies used by the nurses in this category as with category one, with half of the nurses in both categories crossing boundaries between institutional and personal voice. Call 2 chooses to use a personal voice for the giving advice at the end of the call, but retains a professional institutional detachment up to this point. The very conversational technique of the nurse in Call 6, with many examples of paraphrasing and repetition and avoidance of long sequences of algorithm is amplified by the prevalent use of the personal voice:

N: Thank goodness for that, well you put your feet up lovey (laughs)
C: (laughs) alright then, thanks very much.

In Call Nine, the algorithm section is delivered with the institutional voice and when that is complete, the personal voice becomes prevalent with more

examples of crossing boundaries between institutional and everyday talk. The nurse acknowledges that teething seems to be the problem with the baby and warns the caller that she's 'in for a bad night'. There then follows a conversational sequence where the institutional identity is less prevalent and where the nurse offers advice and suggestions outside of the algorithm. The caller is responsive to this. At one stage the nurse speaks entirely from personal experience, crossing boundaries between everyday and institutional talk, and mentions how she used to take her baby for a drive in the car when they would not settle. Taken as advice, this is emphatically rejected by the caller:

> *C: I just can't do that, I'm just too exhausted. I just can't physically do it…*

However, the final outcome of the call is acceptance of the alternative advice proffered by the nurse as is discussed elsewhere.

In comparison, the voice of the nurse in Call Eleven is entirely institutional. The nurse uses very little empathy with no examples of boundary crossing between everyday and institutional talk.

4. Advice Giving

As can be seen from tables 1,2 and 3 out of the four calls in this category, three nurses offered coping and soothing advice and one did not. This is in contrast to category one where no coping advice was offered at all and one nurse out of six offered soothing advice.

In Call 6, the nurse has effectively met the caller's stated expectation within the first few turns. After the caller has later rejected further advice to contact her health visitor, the nurse tries using empathy and makes an effort to explore giving advice about coping, even though the caller has not actually asked for such

advice. The nurse attempts to create the right environment to give coping advice:

N: … there's nothing worse than a colicy baby but there's no way you can console them …

The caller seems unwilling to discuss this and offers no acknowledgement, but reiterates the advice given previously about contacting the health visitor. The nurse tries to overtly move towards discussing coping at the end of the call and it seems that she is making an attempt to make an assessment of the caller's coping strategies and abilities. The nurse does not actually ask the 'coping' question but it may be that she feels the caller has indicated what her reply would be:

C: … it's certainly not driving us mad yet.

Call 9 is the only example of a nurse asking the 'coping' question where prompted by the algorithm, albeit slightly reframed. Later in the call 9, the nurse indicates that she can hear that baby has become more settled during the course of the call. The caller is reassured by this and the nurse prepares to end the call using the institutional voice to invite call back if the baby becomes unsettled again. The caller seeks final reassurance that the nurse thinks the problem is teething, which the nurse acknowledges but takes the opportunity of adding covert coping advice about trying to stay calm, which receives a marked acknowledgement from the caller:

N: … the thing is, when you get upset, they get upset.
C: That's making sense actually.

In addition to this marked acknowledgement, as mentioned above, the caller recognises that the advice the nurse has given is working during the call. She seems reassured by the nurse's advice and willing to accept it.

The nurse in Call 11 enters into long 'advice as information sequence' at the end of the call focusing on feeding following vomiting and preventing dehydration. Caller hardly responds through this then issues another coping alert.

C: He's my first child and I haven't got a clue.

Eleven turns later the nurse asks the caller about how the caller feels and if she thinks she will be able to cope, then reiterates the previous 'advice as information sequence':

N: Do you feel a bit happier …?
C: I feel happier with him being sick. Because usually, when you're feeling sick and something's annoying you, you can feel a bit better afterwards.
N: You're going to be able to cope with him tonight and feel happy just to see how he goes.
C: We're going to put him in the bath and give him a little drink again.

Although this call is the most similar to the calls in category one with the long interview/interrogative sequences the caller is given plenty of opportunity for narrative and detail which she takes. Despite maintaining professional detachment, the nurse is one of the few who explores how the caller is feeling as can be seen from the extract above. However, she uses little empathy and is the only nurse in this category of calls, who does not offer coping or soothing advice.

The coping question is prompted in three out of four of the calls in category two but asked by only one nurse in Call 9. In contrast, the coping question is

prompted in only two out of six calls. It may be that, with the different use of the algorithm in category two, the difference in pace and the greater opportunity for caller's to use narrative and detail, more coping alerts are issued by callers which therefore, results in the 'coping' question occurring in the algorithm sequence more frequently.

Category 3: Algorithm completed but not overt in exchange

Table 5: Summary of calls from category 3

Category	Call 3a	Call 7
Is the coping question prompted?		Yes
Is the coping question asked?		
Is coping advice given?	Yes	Yes
Is soothing advice given?	Yes	Yes

From the sample, there are only two calls which fall into this category where the questions of the algorithm are answered, the screen completed, but the verbal exchange does not exhibit the algorithm as an overt entity. Coping and soothing advice is given but the coping question is not asked in Call 7. In Call 3a, the coping question does not appear in this section of the call, but in the later section (3b) handled by a different nurse. In this category, both nurses make some attempt to provide opportunities for callers to indicate their level of coping ability.

1. Establishing a favourable environment/Seeking shared alignment to the problem.

In Call Seven, the nurse establishes the context and expectation of the caller and records this in the notes section of the screen which is unusual in itself. The caller, after space for some narrative, states his expectation clearly:

C: Aye yes, I got home at about 5 o'clock. My wife's breastfeeding her and she does accept the breast but she's not actually taking an awful lot. She seems to have quite a bit of wind, but we think we've got rid of that now. She won't settle in her cot. She's now fast asleep at the breast but obviously she can't stay like that and we were wondering if it would be alright to giver her a soother?

N: A dummy you mean?

C: Yes.

The Nurse explores the context further rather than going straight into advice about soothers and takes time to refer to potential levels of anxiety to which she receives a marked acknowledgement:

N: Often at this age, especially if you've just got home, you've done the travelling, you're back home, and I think you're a little bit anxious when you first get home…

C: Absolutely yes.

It is at this point the nurse answers the question about soothers and integrates two algorithm questions into the interaction at the same time:

N: And they can sense all that, you know, they know that as well. At this age, they're just settling down, getting used to the breast. What we normally suggest is, until they're established to avoid giving dummies just because of the different sucking mechanism. You know when they're sucking dummies, they're mouth is quite closed but when they're on the breast, they need their mouth quite wide open to take in a lot of breast. Now oftentimes you find the

first couple of days when you get home you find they're going to the breast maybe every hour and settling down at the breast then when they drop off, waking up. How is baby herself, is she nice and pink and warm? ***[Last sentence is algorithm question]****.*

C: Oh yes, nice and pink, nice and warm, nice healthy cry. When she's awake and not crying she's looking around and interested generally.

*N: So, she's alert, that's good. If you had any concerns about the baby not being alert or looking pale or anything like that, then obviously that changes things but, I think with the way things are, she's only two days, was she born at the right time****? [Last sentence is algorithm question]****.*

Call Three is an example of the same call handled by two nurses at different times. Both nurses deal with the call in different ways and the second nurse is referred to in Category One. The first part of the call is handled by a nurse as 'call handler'. As such her role would normally be confined to taking down details so that another nurse can call back. However, the call opens with sheer panic expressed in the voice of the caller and Nurse 1 begins to deal with the situation, which is within her remit.

The caller's perception of the problem is clear: the child is coughing, wheezing, screaming "all the time" and she is concerned he is choking and wonders if she needs to call an ambulance. Her reiteration of this occurs throughout the call:

C: He's screaming all the time and coughing and wheezing. I don't know whether to call an ambulance.

And

C: He's just like wheezing and coughing as if he's choking. He's 6 months old.

And

C: He just started coughing first as if he had something in his throat and now he's like screaming and wretching

And

C: It's just that he keeps coughing.

Towards the end of the sequence, the Nurse 1 clarifies the alignment stressing the problem is less to do with the coughing and the wheezing but the crying, and this is agreed by the caller. Nurse 1 confirms this again when the crying has decreased and she prepares to put the call through the normal process whereby Nurse 2 will call back:

N: I'll put 'crying baby' then the nurse will have an idea what the problem is. He sounds a lot happier now he's got his dummy in.
C: Yes (crying stopped – 18 month old quieter)..

However, when Nurse 2 calls back inside 15 minutes, this agreement is already uncertain as discussed in Category One.

2. Use of algorithm

In Call Seven the nurse's use of the algorithm is very covert. Out of the 19 questions required to be asked, the nurse only asks two directly. It might be that the nurse's experience tells her that these new parents are seeking reassurance as well as wanting straightforward advice about using soothers or dummies to calm their baby. She integrates the algorithm questions into the interaction to confirm her assessment that the baby is well.

In Call Three, Nurse 1 is actually the 'call handler'. Call handlers do not usually progress through the algorithm in the absence of an obvious emergency and Nurse 1 takes the caller through the opening portion of the algorithm before making a decision to put the call through for a nurse to call back as per normal process. Nurse 1 makes judgments re: the nature of the environment and begins to take the necessary information. All of the coping advice and soothing advice she gives are outside the portion of the algorithm that she would normally refer to but which she may well be aware of. Nurse 1 completes all the necessary elements of her role as call handler, even to the point where she asks the marketing question:

N: Can I ask you how you came to know of NHS Direct?

This sudden institutional intrusion, asked at a time when the children have stopped crying, does not seem to come as a surprise to the caller and she provides a matter of fact response.

3. Caller conversational strategies

At the start of Call Seven, the caller is given space to talk and gives some narrative to describe the context. Apart from this occasion, the caller gives one line response tokens but also offers two marked acknowledgements in response to the reflection and advice offered by the Nurse.

N: …I think you're a little bit anxious when you first get home…
C: Absolutely yes

And

C: That makes sense yes.

In Call Seven, the nurse gives advice about using a soother, thus responding to the callers stated expectation, using the institutional voice:

N: What we normally suggest is …

This voice is used again later when reiterating this advice

N: …We do suggest just to hold off from the dummies until they're established….

However, the nurse goes onto express empathy and gives coping advice using the personal voice:

> *N:* ***I*** *think really T, tonight and probably tomorrow night you're going to have quite a tough night OK,* ***I'm*** *being honest with you because there is no miracle cure for this.*

The personal immediately follows the institutional voice from the Nurse in Call Seven as she ends the call, giving the caller her first name in the invitation to call back:

> *N:* *…But you can always ring* ***us*** *back T. We're here all night,* ***my name's G****.*

In Call Three the nature of the interaction between the caller and Nurse 1 contains many examples of everyday talk, personal voice and institutional voice. The Nurse successfully 'does' the institutional business that is establish the state of the child's immediate health, it's breathing, and the need for the caller to be reassured and given coping advice.

Nurse 1's language implies that she has placed the caller into the category of 'young mum' and says as much to her colleague when the caller has moved away from the phone:

> *N:* *... (to colleague) a six month old and an 18 month old screaming together. How old's mum? A baby herself I should think by the sound of her …*

This is supported by the use of language and crossing of boundaries which begins to sound very much like a conversation between mother and daughter.

> *C:* *Can I just put the phone down one second, I won't be long?*
> *N:* *You can darling that's OK …*

4. Advice Giving

The Nurse in Call Seven issues a substantial AIS to which the caller responds with a marked acknowledgement:

> *N: Sometimes when they're with their dad, and they can't smell the milk, and you're walking around with her and rocking her and things like that, and even things like noise, like a tumble drier or something like that, a noise in the background, because they're used to background noise when they've been inside. Sometimes that can help if you walk around with her and things like that. Sometimes even if you just, you know like the knuckle of your little finger, if you let her suck on that, sometimes they'll just go to sleep. Then bundle them up, you know, wrap them up because they like to feel safe, they like to be wrapped round in a sheet because they like to feel closed in. That's how they've been for the last 9 months and now they've got all this space it's quite frightening for them, they can get quite startled.*
>
> *C: That makes sense yes.*

The Nurse ends by reiterating twice the fact that caller can ring her back and she gives her first name again to the caller which he reflects by using her name as the call ends.

Although the nurse has reassured herself that the baby is well in Call Seven, and has perhaps correctly identified the new parents' underlying need for reassurance, the opportunity to assess coping ability and knowledge of coping strategies is not utilised.

In Call Three Nurse 1 can hear the excessive and persistent crying in the background and gives advice on calming, rocking etc… When the crying abates a little, she establishes that the baby is still breathing and continues to give

calming advice whilst asking questions. On three separate turns the caller re-states her concern re: coughing whilst the nurse tries to encourage other coping strategies:

N: Try putting your little finger to his lips and see if he tries to suck on your finger.

In addition, the nurse gives direct response to the concerns about coughing:

C: It's just that he keeps coughing.
N: It's because he's screaming so much, he's panicking because he's screaming so much. Now what's he doing now, is he sucking on your finger? (crying stopping)
C: He's got his dummy in

When she is satisfied that the environment is calmer, Nurse 1 starts to take the necessary details. The caller sounds calmer and the children sound calmer.

Although the caller has stated what the problem is very clearly, the nurse concentrates on helping the caller to calm the child before responding to the caller's concerns as above. However, the caller responds, not through talk, but by apparently interacting with her child as instructed by Nurse 1. She can be heard making shushing noises with some effect. There is no 'packaging' the advice giving to minimize resistance (Silverman 1997) and contrary to Heritage and Sefi's data (1992) advice is accepted without an agreed 'problem' having been defined until a little later in the call. However, the reactive nature of the call is, at this stage, more akin to calls to an emergency call centre than to the proactive advice giving within the context of the home environment that Heritage and Sefi examine.

In both of these calls the interaction may be described as instinctive with a mixture of personal and institutional voice which is regarded positively by the

caller. However, whereas in call seven, the call is very much dominated by the nurse, call three hears more from the caller probably because of the apparently initial urgent context and the reactive nature of the call.

Although the two calls fall into the same category, it is difficult to draw many parallels between them as one takes place at a leisurely pace with little or no fear of an urgent problem, and the other begins with panic and an immediate need to eliminate an emergency. In addition, the role of the nurses differ in these calls as call three is taking the call as a call handler, preparing to pass the call onto someone else and this is not the case in call seven.

Chapter Conclusion

This chapter presents an analysis of NHS Direct call data using an interpretive paradigm drawn from relevant literature. It draws together the two stages of analysis: initial analysis of each individual call identifies different use of the crying baby algorithm by the nurses, and further analysis identifies to what extent and in what ways they are used differently by nurses, highlighting commonalities within each category. A brief summary of each category is given below.

Category One: Direct use of the algorithm:

- The caller's expectation is not always clearly stated;
- The pace of the call is not 'leisurely';
- There is space for narrative at the beginning of the call;
- Little opportunity is provided for narrative to take place during the call and little opportunity for the caller to re-establish their expectation;
- The calls contain long interview/interrogative sequences and minimal uptake markers;
- The advice is packaged as 'advice as information sequence' at the end of the call;
- There is no pattern of preference for use of either personal or institutional voice by the nurses;

- No coping advice is given and soothing advice given in only one call;
- There are no overt expressions of coping alerts issued by the callers.

Category Two: Adding to the algorithm

- The caller's expectation is not always clearly stated;
- The pace of the call is more measured and more leisurely;
- There are several spaces for narrative and detail both at the beginning of the call and during;
- Callers have the opportunity to restate their expectation giving nurses the opportunity to realign their agreement with the caller;
- The interview/interrogative sequences are short and/or broken with both minimal and detailed uptake markers present;
- Advice is given throughout the call;
- There is no pattern of preference for use of either personal or institutional voice by the nurses;
- Coping and soothing advice is present in most calls;
- There is evidence of coping and soothing advice in most calls;
- This category contains the single call where the 'coping question' is clearly asked as prompted by the algorithm.

Category Three: Covert completion of the algorithm.

- Both callers eventually establish a clear expectation;
- There are several spaces for narrative and detail both at the beginning of the call and during;
- Callers have the opportunity to restate their expectation giving nurses the opportunity to realign their agreement with the caller;
- The interview/interrogative sequence is barely apparent.
- Advice is packaged as 'advice as information' at the end of one call and is given throughout in the other.
- Coping and soothing advice is present in both calls.

- Coping alerts are issued by both callers.

In terms of providing a signposting triage service that sorts, chooses and classifies (Edwards 1994), and providing simple advice, then the structure and pace of the category one approach may arguably, do the business of NHS Direct. However, in terms of fulfilling that function *and* providing the reassurance, practical and emotional support that caller's say they want (King College London 2000), the category two and three approach may be more appropriate in fulfilling the 'helpline' function of NHS Direct.

These findings highlighted the need to try and get beneath the surface of why the crying baby algorithm was used differently by nurses. In order to do this, a decision was taken to try and explore the opinions and experiences of nurses, using as a starting point, the nature and description of the three categories identified through call data analysis.

CHAPTER FIVE: Data collection and Analysis (phase two)

Introduction

A decision was made to undertake a second phase of data collection and analysis using a solo focus group of nurses in order to explore further the variance in nursing practice at NHS Direct as revealed by analysis of the Phase One data. Key issues for further exploration that emerged from Phase One included the use and different use of the algorithms for calls where the outcome is non-emergency and non-medical, such as those relating to crying babies, the nature of the nurse/caller interaction and how the role in dealing with such calls is understood within an organisational context.

Phase Two of this study involves the thematic analysis of the solo focus group data whereby themes and patterns within the data are identified and analysed. A critical discussion of the methodology and means by which rigour was ensured throughout the process, is considered in Chapter Three. As stated in Chapter Three, thematic analysis involves a recursive process of reading and re-reading the data during which theorising is taking place as data are examined for repeated patterns of meaning.

This chapter emphasises the relevance and influence of the grounded theory strategy in informing the focus group interview schedule (provided at appendix 5) and provides a critical discussion of the nature of thematic analysis and coding building on that introduced at Chapter Three. Through the analysis of the focus group data, this chapter intends to provide a coherent account of the story revealed by the data. It is organised under the thematic headings with data extracts demonstrating prevalence of the theme in question. Prior to the narrative description of the analysis, I have first provided a diagrammatic description of how the levels of coding inter-relate both within the context of the

entire focus group data (figure 1), then separately within the context of each theme (figure 2a,b & c). In addition to presenting the data under coding levels, this chapter also matches the code with examples of corresponding data extracts. The chapter concludes with a summary of the findings.

Data Collection

Since selection criteria for call data in Phase One did not include any individual nurse related criteria, there was no specific sampling frame used for focus group participation other than all nurses were selected from the same NHS Direct site, as the calls. A participant information sheet and consent form were produced (Appendix 3 and 4). The Paediatric Lead Nurse issued an open invitation to nurses to attend a focus group on a given date (18th April 2006). This was circulated by email and included the participant information sheet. Twelve nurses showed an interest and on the day, six were able to attend. The group of six included nurses from different nursing specialities including health visiting, paediatrics and adult nursing. The group also included a range of NHS Direct experience ranging from being there when the site opened to having been in post for only several months. This information was not deliberately sought but emerged through the focus group discussions.

I identified myself as moderator for the focus group. Fielding and Thomas (2001) describe three levels of moderation of focus groups; high, medium and low, each being distinguished by the level of control the moderator has over the discussion. At all levels the moderator:

> "… performs a guiding role in the discussion, ready to interject, ask questions and probe for further information when necessary" (p167).

I would describe my role as a medium level moderator, whereby I allowed the discussion to consider my previously key areas discussed below.

The focus group schedule (attached at appendix 5) reflects the themes identified in Phase One. These are summarised below:

Figure 11 Focus Group Schedule

- How are the algorithms used?
- Why are they sometimes used differently?
- What is happening during the interaction between nurse and caller?
- What do nurses themselves perceive to be their role in using the crying baby and shaken baby algorithm.
- How do nurses feel when they get this type of call?
- Do they handle them differently?

As moderator, I prepared to read out the transcripts of at least two of the calls from Phase One. I had considered playing back the original tape but felt that nurses in the group could possibly identify the nurse in the call. I also considered asking actors to be recorded reading the script with myself ensuring the necessary tone and emphasis were correct. However, this would prove both extremely time consuming and costly. I considered giving the nurses time to read the call transcripts themselves but there were points in the calls where tone of voice added to the context that I wanted them to hear. I therefore, chose to read the calls out aloud myself at the end of the focus group. The calls had not been selected as examples of good or bad practice, but as examples of how different nurses use the same algorithm differently.

The focus group took place in April 2006. All participants signed a consent form. The focus group was recorded digitally using MP3 technology and I transcribed the recording verbatim . Although extremely time consuming, I found the process advantageous in that it helped me become immersed in the data, which I felt, assisted the analysis process (Braun and Clarke 2006).

Data Analysis

An essential point to bear in mind during the analysis of focus group data is that the unit of analysis is the group, not individuals within the group (Fielding and Thomas 2001). Analysis of the focus group data must also reflect interaction between participants, areas of agreement and disagreement and group dynamics (Kitzinger 2005; Fielding and Thomas 2001; Cronin 2001). Beyond this, the analysis of focus group data involves the same techniques as the analysis of other qualitative self report data whereby:

> "… the researchers draw together and compare discussions of similar themes…" (Kitzinger 2005:66)

A process of thematic coding based on open and axial coding (Strauss and Corbin 1998) and very much guided by the work of Braun and Clarke (2006) was employed to analyse the focus group data (discussed in more detail at Chapter Three). Three key thematic conditions or themes were identified. Embedded within these three themes were six sub themes (actions) which embodied numerous codes identified as consequences. The first general level of coding as described by Coffey and Atkinson (1996) is initially drawn from the focus of the questions detailed in Figure 11 above. This starting point could be described as seeking to realise the answer to the question which Strauss and Corbin (1998) define in their approach: 'what is going on here?'. It must be emphasised that this approach is in keeping with the wider grounded theory tradition in that emerging theory from Phase One of the study informs the starting point, the interview schedule for Phase Two.

Figure 1 shows how, by returning to the transcript document, these broad themes are broken down to greater and greater details, through intermediate and then specific phases (Coffey and Atkinson 1996). As can be seen by comparing the interview schedule themes, with those of the final analysis, the process of recontextualisation and reassembling of data has realigned relationships within

the data resulting in the themes collapsing into one another. This process is associated with ensuring analytical rigour as it involves repeated exploration of interactions between the data, re-checking and cross referencing codes. In addition to the collapsing of some themes, sub themes and codes changed or were discarded altogether. Although time consuming and, at times tedious, the process served to enlighten me how the researcher's assumptions, the meaning of certain aspects of the data to the researcher and the researcher's memory can serve to corrupt data analysis unless the rigour and honesty of disciplined coding is employed. This is discussed in more detail in Chapter Three.

Figure 13: Focus Group Data coding levels

Themes. (general)

1. Use and differing use of algorithms
2. Interaction between nurse and caller?
3. Nurses perception of their role in using the 'crying baby' algorithm and dealing with the calls.

Sub-themes. (Intermediate)

a) Personal, professional background & experience.
b) Procedure & guidelines
c) Safety
d) Skill and Accountability
e) Caller reaction
f) Nurse reaction

Codes. (specific)

- Clinical
- Rephrase/won't ask
- experience
- Interpretation/language
- Difficulties
- Confidence/comfort
- Fear/error/dare
- Team working
- Upgrade/downgrade
- Strategy
- Guide
- Version
- Accountability
- Caution
- Picking up cues
- Assessment
- Advice giving
- Skill
- Safety
- Concern
- Frustration
- Calm
- Alarm
- Guilt
- Agitated
- Poor interaction
- Empathy
- Encourage
- Listening
- Mental picture
- Intervene/sort it
- Relax
- Wind up
- Procedure
- Men
- Reassure

Figure 14: inter-relation between individual themes, sub themes and codes

Themes. (general)	**Sub-themes. (intermediate)**	**Codes. (specific)**
1. Use and differing use of algorithms	Personal, professional background & experience	• Clinical judgement/experience/knowledge • Rephrase/ask around • New experience • Interpretation/language • Difficulties • Confidence/comfort • Fear/error/dare • Gut feeling • Team working • Upgrade/downgrade • Strategy
	Procedure & guidelines	• Guide • Difficulties • Versions • Experience • Trust • Upgrade/downgrade
	Safety	• Accountability • Interpretation/language • Confidence/comfort • Fear/error/dare • Caution • Upgrade/downgrade • Strategy
	Skill and Accountability	• Clinical judgement/experience/knowledge • Rephrase/ask around • Interpretation/language • Difficulties • Confidence/comfort • Assessment • Gut feeling • Team working • Advice giving • Upgrade/downgrade • Strategy

Figure 15: inter-relation between individual themes, sub themes and codes

Themes.(general)	**Sub-themes.(intermediate)**	**Codes. (specific)**
2. Interaction between nurse and caller	Personal, professional background & experience	• Difficult • Interpretation/language • Strategy • Rephrase/ask around
	Procedure & guidelines	• Intervene/sort it • Advice giving • Poor interaction • Strategy
	Safety	• Interpretation/language • Rephrase/ask around • Intervene/sort it • Advice giving • Procedure • Strategy
	Skill and Accountability	• Calm/reassure • Empathy/mental picture • Listening • Picking up cues • Poor interaction • Strategy • Wind up/frustration/concern/alarm • Procedure
	Caller Response	• Anxiety • Safety/Concern • Wind up/frustration/concern/alarm • Reassured/calm • Men

Figure 16: inter-relation between individual themes, sub themes and codes

Themes.(general)	**Sub-themes.(intermediate)**	**Codes. (specific)**
3. Nurses perception of their role in using the 'crying baby' algorithm and dealing with the calls?	Personal, professional background & experience	• Safety/danger • Rephrase/ask around/wouldn't ask • Pick up cues • Interpretation/language • Difficulty • Strategy
	Procedure & guidelines	• Rephrase/ask around/wouldn't ask • Pick up cues • Intervene/sort it
	Safety	• Intervene/sort it • Safety/danger • Caution • Advice giving • Upgrade/downgrade
	Skill and Accountability	• Advice giving • Upgrade/downgrade • Pick up cues • Interpretation • Mental picture
	Caller reaction	• Control • Offence • Floodgates • Reassurance • Men • Rephrase/ask around/wouldn't ask

Analysis

This analysis will be presented under the major themes, including identification of the sub themes, and matching examples of data extracts with codes.

Theme One: Use and differing use of algorithms

Sub-themes:

- Personal, professional background & experience
- Procedure & guidelines
- Safety
- Skill and Accountability

Clinical Judgement/experience/knowledge

The focus group talk a great deal about the relationship between clinical judgement and knowledge and the understanding that the algorithm is a means of support.

> *N4: … It's up to our clinical judgement now whether we actually ask every specific question.*

The dichotomy of balancing experience with the decision aid software is further exemplified by Nurse 5:

> *N5: … So the minute you mention earache, it'll whizz you to the earache and you're thinking, 'I don't really think that's the problem. I think it's the sickness and diarrhoea and abdominal pain that's the problem' and it sort of shoots you to places where you don't really want to be sometimes.*

This highlights Aas's (2004) concerns that algorithmic, categorical thinking threatens the narrative components which place the individual within a context, thus deconstructing subjectivity. The algorithm is taking the nurse down a decision route she would not choose to adopt had she been using her clinical

judgement without the software. Nurse 3 explains that the solution to this problem is to avoid the specificity of the algorithm questions and to ask 'wide berth' questions thus manipulating the algorithm to conform to her professional judgement. This nurse attributes her knowledge of working in this way to her previous experience. However, whether this be previous NHS Direct experience, previous professional experience or personal experience is not exactly clear:

N3: I, I, I... it might sound awful but I didn't find it too difficult because of the way I'd worked previously, like with the algorithms now, rather than go 'have you got pain in your head, have you got pain in your ear, have you got pain here there and everywhere?' I just say have you got pain anywhere and with children, I'll say, 'are they holding themselves anywhere as if they've got any pain or have you tried to go near, say, they're stomach, do they try to stop you?' so that when it comes to all these different ones, I just miss it. I just ask a wide berth question rather than specific so it's not pointing them to anything direct.
M: and is that from experience do you think?
N3: I think it's from my own personal experiences.
M: from you previous practice?
N3: I think so.

AND

N3: … The algorithm goes in one way, you can't choose where you go in, its just a matter of once you've used it or used it several times you know what's in it so some of the things that you're asking and how you're asking, you know that that's a question in the future that you can tick later when you get there and you don't have to go back to it, but its just collecting the information and ticking it once you come to it.

The literature on the subject of the impact of professional knowledge is not in complete agreement; Pettinarie and Jessopp (2001) outline how the development of telephone triage skills are informed by professional background and experience; O'Cathain et al (2004b) found that clinical background did not impact on decision making but Monaghan et al (2003) emphasise the potential need for nurses to draw on skills and experience not evident in the information

contained within the algorithm. Nurse 3 offers a potential explanation that her ability to work in this way heralds from her experience as a health visitor:

> *N3: and that might be where it comes from because with my health visitor background I was taught assessments and so that comes into the algorithms I suppose.*

There is general agreement that NHS Direct experience and time served using the system, coupled with professional background, does influence how the algorithms are used:

> *N2: I think its experience and confidence isn't it?*
> *N5: I think you do change the way you use them the longer you go on. I think first everybody is, like you say, a bit more rigid really and then you start getting your nursing hat back on and you think 'right, this is the situation and what am I going to do with it?' and looking at all of it really.*
> *N1: I think it depends on your background as well, if you're not from a paediatric background ...*

The impact of personal background, specifically in relation to having children, is also agreed as changing how nurses interact with the algorithm. This is expressed in terms of feeling relaxed and more comfortable when dealing with crying baby issues and emphasises the point made by Brown and Duguid (2000) that knowledge refers to a tacit dimension that arises from "practical living in the world":

> *N4: And also I think if you've got children of your own it makes a difference as well because just by being used to children you've got a different attitude towards the crying baby really. If you've had crying babies of your own you're much more relaxed than someone who's nursed in ITU for 20 years and never had any children.*

AND

> *N5: …. not being paediatric background, although I've got my own children I probably put a higher disposition on paediatric things than*

paediatric nurses do, but I think sometimes in things I feel more comfortable in, or more experienced of, I have ended up finishing a call and the algorithm's not completed right to the end because I'm like, well, (laughs) we did this, this and this and you know, this is like, you know I've used it to a certain extent but it hasn't taken me to the end point completely that I've already go to with the caller just as a professional using your own knowledge and things

The group reveal a dichotomy between feeling relaxed with crying baby problems if the nurse is a parent and knows what its like, compared to a paediatric nurse with no children, and the fact that not being from a paediatric background yields more caution when responding to the algorithm prompt:

N2: … if they're a certain age, I tend to upgrade, but that's lack of experience because I'm not paediatric background either.

The prevalence of clinical knowledge over tacit knowledge is unclear here but there is an underlying suggestion that where the crying is a symptom of something else, then clinical paediatric knowledge is valuable, and where the crying is apparently not clinically significant, then tacit knowledge drawn from experience as a parent is more valuable.

The group reflect how difference in the background and experience would be the same in any clinical situation. However, Nurse 6 suggests how knowledge is pooled in clinical settings and beyond basic nursing skills, mixing specialisms is not the norm but this is not explored further by the group:

N6: If you had an ICU nurse on Gynae, you might be snookered. Basic skills are there but ...

New Experience

As a new practitioner at NHS Direct, the group agreed that there is an initial stage of heightened difficulty. Concentrating on the screen and the new technology and way of working interferes with the interaction with the caller. The new practitioner reads what is on the computer screen:

N2: It's hard as well, coz I'm new, and when you're reading what it says, you're not really listening into what they're saying because you're concentrating on reading what it says so you get like a lot of pauses then and it don't flow then does it?

AND

N1: It's difficult when you first start, it really is, it really is.

Added to this unfamiliarity is the fear of getting it wrong which adds to the need to ask the questions as they appear on the screen:

N4: I found it really difficult when I first came and I was petrified if I didn't ask every single question, I've missed something really vital, you know, and made a massive great error and it took months and months before I was confident in what I was doing. You know, I thought I'd never stay here. I've been here for a long time now and when I first, if you'd asked me 2 months after I started, I'd say I'd be leaving in 6 months time, I just can't do it, it's just too hard… it was so alien, not seeing, you know, you see a baby and you know whether its well or its ill you know dramatically, but you got a stressed parent on the phone you've got absolutely no idea, it could be something, it could be nothing.

Rephrase/ask around

The need to sometimes ask wider questions than appear on the algorithm is a point of agreement among the group. This is expressed as being useful in two ways: as stated previously, it helps the nurse manipulate the algorithm to conform with her professional judgement; it also helps ensure the answer given by the caller to the nurses' questions, is the correct one:

N1: Yeh, and I certainly, when I'm doing it, for one question that's given on the algorithm, I'll probably ask five, or six or more, I don't just ask that bog standard question, I'll ask more around it.

N4: I'll rephrase it, I don't often use the ones that's there anyway. Often they'll say 'yes' to something in an algorithm question, that if you ask more around that question, the answer will change quite substantially. If you leave it as 'yes' you could be ending up 999

ambulance but if you dig deeper you can end up with home care or GP or...

Greatbach et al (2005) might suggest that this is an example of nurses resisting a transformation to rule-based systems. However, there is no explicit suggestions in the group discourse, that professional judgement is what prompts the 'rephrasing' but it is implicit that the holistic nature of nurse assessment is an underpinning factor and is perhaps more indicative of the difficulties suggested by White and Stancombe (2003) in basing clinical judgement on an algorithmic process rather than on case formulation. Perhaps it is simply the different approaches to 'caring' and 'curing' (Kelly and Symond 2003).

N2: Because people don't fit into boxes do they? So you can't fit questions round specific situations have to look at the wide picture...

Interpretation/language

One of the key challenges and difficulties associated with providing the NHS Direct service and which presents one of the fundamental differences to traditional nursing, was identified by the group as not being able to see the client/patient and having to interpret a parent's description of their child's appearance and demeanour:

N4: it was so alien, not seeing, you know, you see a baby and you know whether its well or its ill you know dramatically, but you got a stressed parent on the phone you've got absolutely no idea, it could be something, it could be nothing.
N1 :... they're not trained to assess, that's the other thing, we're relying on their ...
N4: ... and very emotionally involved ...
N1 ... interpretation of what you're asking them. It is really difficult.

The nurses reflect the complex and knowledge-intensive nature of telephone triage work and the difficulties associated with making assessments and taking decisions in the absence of visual cues as identified by different authors

(Zimmerman 1992; Mayo 1998; Holmstrom 2007). With specific regard to using the 'crying baby' algorithm which is regarded by the group as 'broad', this presented further problems, particularly if the parent on the phone is anxious. The challenges of interpretation and language were not only confined to the nurse understanding the caller but the caller understanding the nurse:

N2: Yes, it's difficult and especially if mum comes on the phone and she's wound up, it's really difficult and then if there's no specifics what they're crying for, you know, you're thinking, god, (together) which one do I use?
N2/4: (together) which one do I use? ...
N1 ... and the words they use as well is 'gasping'. It's those kind of words which a gasping baby you need a 999 for but maybe they mean its, well they say raspy breathing or wheezy breathing or they're choking or they're floppy and I found a real problem with that when I first started because obviously a floppy baby needs immediate attention but to a parent, they use a floppy baby to say they've not got off the settee today to play, you know its their interpretation on our medical terms as well.

Nurse 1 shared how she emphasises the importance of making sure she is interpreting the caller correctly:

N1: but I always say, 'look, you know I can't see him, you're my eyes, we just need to make sure'.

Difficulties

In addition to the difficulties in providing advice for a patient you cannot see and having to rely on interpretation of reported signs and symptoms as described above, the group agreed with Nurse 4 who emphasised her fear at getting it wrong (see entry under 'New Experience' above). This supports the points raised by Glasper (1993) and Pettinari and Jessopp (2001) relating to the extent of the skills needed to assess patients you can neither see nor touch. In addition, the group reflect the findings of Mayo (1998) that despite the virtual safety inherent within the algorithmic system, nurses still feel uncertain and lack confidence in some of the decisions they have to make.

Another difficulty associated with increased confidence in this way of working is 'daring' to trust the 'gut feeling' and allow tacit knowledge to take precedence over the algorithm.

> *N5: I think sometimes with the algorithm where its difficult where you've got a gut feeling that it's a 'no' to that choking just because of the other things that are going on, but you think, 'dare I say no' and move onto something that's going to be GP tomorrow when ...*

The concepts of *confidence/ comfort* and *fear/error/dare* emerged sufficiently strongly to warrant separate codes as shown in figure 2.

The notions of confidence, growing confidence, building on experience after an initial phase of fear, then feeling confident enough to allow tacit knowledge and professional judgement prominence, all feature highly in the discourse reliant to how nurses use the algorithms differently. In addition, these factors are crucial in understanding how and why the nurses will sometimes manipulate the algorithm to support their professional judgement rather than allowing the algorithm to dictate their professional judgement. This supports the findings of Ruston (2006) and Greatbatch et al (2005) who emphasise how nurses privilege their expertise and knowledge over that of the computer system, although, as we shall see later, for long serving NHS direct practitioners, the genesis of that professional judgement may very well be the algorithm and related advice protocols, themselves!

Team Work

When walking into an NHS direct centre, the visitor is confronted with a very typical call centre lay out. Nurses are sat at a desk amid a group of desks, separated by short boards that do no obstruct vision. When I visited, I was struck by the quietness of the place with each nurse, focused on the computer in front of them, wearing a headset covering one ear with a microphone attachment near

the mouth. It seemed a very absorbed atmosphere, reminding me of a library, with individuals concentrating on their own call and apparently not interacting with their colleagues. It came as a great surprise, therefore, to learn that the nurses work in a team just as they may do in a ward situation, or community nursing situation; relying on each other for reassurance, support and advice. My surprise was evident in the interaction with the focus group who all agreed working at NHS Direct still involves the team approach.

N6: Does it depend on who you've sat next to and heard people say things, I mean going back a long time when I was using it I used to hear people dealing with certain calls and think, 'I'll use that next time' if it's a really good way of asking someone something.

AND

N2: I think it's nice to know whose on with you, like if I'm on shift and I've got a call about a baby and Sharon's on, then I'll ask Sharon and sort of network with others.
M: During a call?
N2: Oh yeh (general agreement)
M: Even though it's just you and the caller, you use a team approach?
N4: Oh yeh, definitely.

Upgrade/Downgrade

A description of what is meant by 'upgrade' and 'downgrade' sometimes also referred to as 'override' and 'underride', is given at more detail in Chapter Two.

The decision to upgrade or downgrade a final disposition, following completion of the algorithm is clearly linked to the nurses' tacit knowledge:

N3: There are times when I upgrade. You know when you've followed through the algorithm but you've got a feeling that it's not quite right and you're more concerned than things that have actually come through on the algorithm. There's times when I've upgraded as well as down graded.

However, in relation to children, there is mainly agreement among the group that downgrading would be unusual:

N4: I think the crying baby one, there's not many times when you have to upgrade. There's some but not many because it does tend to be very very cautious ...

Nurse 4 went on to say that there might be occasions where she would downgrade:

N4: ... and I think probably, I mean on a night time they probably tend to downgrade a bit more just to see, you know, if its 4 o'clock in the morning, you'd probably downgrade more to see them through to GP or health visitor in the morning.

However, this yielded a sense of tension in the group who disagreed and supported Nurse 5 in her explanation. Nurse 4 justifies her point by reminding Nurse 5 about the safety net of the 'worsening advice':

N5: I think if I ever looked at my statistics for upgrading and downgrading, I bet most of my children ones if anything would go up rather than down. I think there'd be very very few that would go down. I mean if anything, it might be that if it was GP 6 hours and it was 1 o'clock in the morning, maybe somebody else would say 'well hang on till your own doctors open' which would obviously be over 6 hours but feel comfortable that's alright I would probably send it through and ...
N4: But you'd give that advice with worsening ... you know if it continues ...
N5: ... Oh yeh I would, yes that's right yes.
N4: ... ring the GP straight away.
N5: Oh no, no I'm not sure you're not doing it right, I just think it's me being a bit … (laughs)

Strategy

The discussion about strategies adopted to deal with different situations, mainly emerged from the group's reactions to the calls I read out. This was particularly in relation to a nurse as call handler who had successfully calmed a distraught

mum, babies had settled as a result, and the call handler informed the caller the nurse would ring her back. On hearing the call during data collection, I felt this nurse had done well in bringing some calm to the situation and I was surprised at the level of criticism the focus group brought against the nurse who they felt should have stayed with the call:

N5: …I don't think it would have been very nice to say to that mum at that moment 'someone will ring back'
N6: ...without saying 'we're really busy and I know how bad it is, but I'm really going to get someone to do it as soon as possible' or just explain.
N5: If someone was with her, you know you'd think, someone's there and she'll be alright till someone rings her back whether it's 10 minutes or 20 minutes.
N3: There's chaos and mum's distraught at the other end and even the second nurse is offering to cut off again and say 'well I'll ring you later. Get on with it and I'll ring you back when he's a bit quieter'.

Guide

The algorithm is explicitly described by the nurses as a 'guide' with the focus group in full agreement about this:

N1: They're a guide but not a replacement for your clinical knowledge either.

AND

N3: They're a guideline and a framework to hang lots of other things onto

I tried to probe to establish where the notion of the algorithm as a guide came from. Despite being definitive in their description, the nurses were unable to source their information:

M: … Where do you get that from about being a guide? Is that what you're trained, is that what you're taught or has that become your opinion?
N1: I think it's ... well I don't really know ...

N4: I think it's become my opinion ...
N1: Yeh

In response to reading out one of the call examples, Nurse 5 identified the disorganised nature of the call and highlighted how the algorithm lent some structure:

N5: I was going to say, there's no beginning, middle or end at all is there, not even if you use the algorithm as a script or whether you use it as a guide you have a sort of beginning, middle and an end.

Versions

The group agreed that the current version (in 2006 this was Version 10) allowed more clinical judgement from the nurse:

N4: … I mean we don't actually have to ask every algorithm question now since Version 10 came out whereas before we used to have to ask every single question but it's up to our clinical judgement now whether we actually ask every specific question.
N3: And with the new Version 10, it misses some of the previous questions out, it ... depending what your answer is where it takes you to.

As one might expect from professionals with different lengths of service in an organisation, there was some variance in the understanding of the technological development of the software, but there was agreement that there was more freedom in terms of clinical decision-making, perhaps at the expense of the advice section:

N3: I've found with the new system though that the home care advice isn't as comprehensive as it was with the old one,.

The emphasis on a requirement that software allows individual clinical judgement again supports the findings of Ruston (2006) and Greatbatch et al (2005) rather than those of authors who highlight concerns that independent judgement holds

less privilege within an algorithmic context which are designed to minimise risk (Harrison and Dowsell 2002; White and Stancombe 2003).

Accountability

As is apparent in the discussion about clinical judgement and the algorithms as a guide, there is a strong sense among the group that they are as accountable and responsible for their actions and answerable under the nursing Code of Professional Practice as any other nurse in any other clinical setting:

> *N5: We all sort of know that we're here because anyone can click yes, no, uncertain and go down an algorithm without actually thinking beyond what is the information it's giving you. That's why we're here as people with clinical experience to be able to interpret that information and do something appropriately with it…. I've got to stand up and actually justify why I passed that by and didn't sort of feel it was a 999 ambulance,…*

Caution

Within the context of understanding their accountability and responsibility as nurses, the group also acknowledged that adhering to the algorithm yields safety:

> *N4: (overlapping) Uncertain nearly always sends you into the 'yes', it sends you the same way as a 'yes' would doesn't it, for the safety side and so...*
>
> AND
>
> *N5: And I think that's probably one of the things with the algorithm, if you are in a call with something that you're not 100% yourself. If you go with the algorithm you know it's going to come out with a safe result, or you're hoping so, even if at the end of the day, you wouldn't maybe have known entirely what to do you know it, it is guiding you into something that will be...*

It is interesting to note that the nurses regard the algorithm as ensuring safety supporting the notion that the highly scripted approach to health service delivery embodied within NHS Direct, does offer to help minimise risk of malpractice as

highlighted by Hanlon et al (2005). In addition, the comments from the focus group support the findings of Monaghan et al (2003) that nurses without clinical knowledge relevant to the call relied more on the computer decision support software.

Nurse 1 explained that her way of ensuring safety is to enhance the algorithm questions with her own:

> *N1: It depends what kind of practitioner you are yourself anyway. If you're somebody who cuts corners, and I'm not, although I do stick to the algorithm, I do ask other questions but at the end of the day you've got to be safe. You can't see them, you've got to go on what they tell you, so although I do upgrade, downgrade, you've still got to be safe.*

Implicit within this is the suggestion that the algorithm won't stop a practitioner who 'cuts corners' from making unsafe decisions. This is again related to professional background as she adds:

> *N1: I think when you've come from Paeds and you've seen how quickly babies can go off, you know you've got to be cautious.*

Assessment

Discussion around assessment mainly takes place within the context of difficulties of not being able to see the patient, having to rely on the parent's report of their child's condition, and confidence gleaned from professional background as discussed in more detail above.

Advice giving

Despite the fact that the group agreed the algorithm yields safety and, in relation to 'crying baby', not 'sticking' with the algorithm during the interrogative sequence and 'cutting corners' was not regarded as 'safe', the group did not feel the same attention to details was necessary for the advice-giving sequence of the call.

N1: ... you just wouldn't give that. I've never given that… I've never said put them in front of the washing machine or whatever (laughs) I say about soothing them and rocking them that kind of thing but you know...
N3: I've mentioned soft music.
N5: Taking them in the car...
N1: taking them out in the car that kind of thing.
M: right.
N6: We used to always say put the vacuum cleaner on, the constant noise often stops them.
N3: and that's why I say radio, not always tuned in properly but just ...

Although there is amusement at the suggestions made in the advice giving protocols, and confidence among the group about whether they would use them or not, the final point made by Nurse 3, stated as her own advice, actually comes from the advice giving protocol on the system. In common with this, O'Cathain et al (2004a) found that nurses combine and internalise information from the software with that of their professional and tacit knowledge.

There was no discussion about safety or accountability in relation to advice giving apart from, as part of the disagreement between the group highlighted by Nurse 5 and Nurse 4, the value of 'worsening advice' is alluded to (see 'upgrade/downgrade' above).

Theme Two: Interaction between nurse and caller

Sub-themes

- Personal, professional background & experience
- Safety
- Skill and Accountability
- Caller Response

Difficult

One of the key difficulties identified for new practitioners in the interaction between nurse and caller is the concentration required in reading information. This was felt to affect the flow of conversation:

> *N2: It's hard as well, coz I'm new, and when you're reading what it says, you're not really listening into what they're saying because you're concentrating on reading what it says so you get like a lot of pauses then and it don't flow then does it?*

In addition, Nurse 5 indicated how a parent may give a definitive answer to a question, but, the nurse can deduce from what they can hear, that the answer is not accurate:

> *N5: Well you've got choices and its often, there's either yes or no in some of the questions or yes, no or uncertain and if they're saying, which not just with crying baby and I know that's what we're focusing on but if people are actually saying 'Oh well yes I am' its very extreme and they are gasping you're thinking, 'but you don't sound like it is' and then you can hear this child or baby sort of screaming, you're thinking 'well they're obviously filling their lungs somehow' you know, and its really hard I think..*

The group agreed with Nurse 5 that the lack of physical presence with the client made offering reassurance more of a challenge:

> *N5: I think for me this is when nursing on the phone just gets hard, because you can't just say ...'it'll be alright' and just the tactile sort of things you would use, it's just so hard is not it, because you know there's someone there who desperately just wants someone to sort it out.*

Interpretation/language

As identified above, being able to hear that what the parent is telling you is not accurate presents a difficulty which also interferes with interaction. In addition to this, interaction is felt to be affected by terminology and language:

> *N2: and language can be a barrier as well, you know one of the questions, 'is there a lump or swelling either side of the groin' well some people don't know where the groin is, you know they say 'what do you mean, which groin?' and you think 'god!'*

The group had previously agreed on the need to be safe and had shared strategies for ensuring information was correct. However, the group now agrees that is is also acceptable to not ask certain questions, in particular the 'coping question'. Nurse 1 is very clear that the nurse/caller interaction should be such that the nurse can pick up cues without asking the question:

> *N1: I think you'd pick cues up without actually asking that question, or I would hope you would. You can hopefully tell that they're that fraught that they're needing something else. I don't think ... I mean even on a ward I wouldn't ask that question, 'would you feel that you're going to shake him?' I know it's more appropriate on the phone, but I'm sure you'd be able to pick the cues up before you need to ask that question.*

Rephrase/ask around

In addition to not asking the 'coping question' the group agrees that they might ask around or rephrase it. There are different levels of agreement in the group

about the effect on interaction that might result from asking the ‘coping question’. Nurse 4 is clear she would not ask the question and prefers to ask very broad questions in an attempt to assess the parent’s coping structures:

N4: and I think for right or wrong, I've never asked that question direct either, but more, young mums who are by themselves who sound fraught, I'm more likely to ask questions about that, who's about, who can they ring, who can they get into help, but I'd never ask a young mum that because I'd think she'd be really offended by it.

Nurse 3, however, rephrases the question slightly but maintains the directness of it and reports that offence was not an apparent reaction:

N3: I usually say, 'have you got to the state where the baby is getting on top of you?'
M: What sort of reaction do you get from that usually?
N3: The majority of times they say 'no, no, you know, that's why I've rung, I've rung because I'm in control and just wanting to know what I can do, but no I've not got to that state at all'. I've not had anybody that's been offended by it or sounded to be offended.

Most of the group support Nurse 4’s broad approach with Nurse 1 restating the strength of picking up cues and confirming that a broad trigger question can yield the same result as being direct:

N1: I wouldn't ask that, I'd be picking up other cues or maybe saying 'how are you feeling?' or ... and they'd usually tell you, 'I'm beyond it or I'm at the end of my tether' they're the kind of things they say and they say them right at the beginning, so its actually listening to them they whole part through the call. I don't think you need to ask that question.

AND

N4: If you just say something like 'you must be really exhausted if she's been crying that long' all sorts comes out, suddenly the flood gates open.

Intervene/sort it

As mentioned above, the lack of ability to be physically present to provide reassurance is a source of difficulty for the nurse and the group share means by which they feel they intervene positively:

> *N4: It makes your alarm bells sound, then and you know that you need somebody to see that baby and do something for mum and baby so you'd either be sending them to the GP or A&E or ...*
>
> AND
>
> *N5: I think if it wasn't anything that's quite as extreme as that, I think I would be like 'do you want me to ring somebody who could come to you', you know, coz they maybe just don't feel that they can you know do anything more other than ... so they maybe don't want to ring mum in law or sister or somebody, but if you said, 'do you want me to ring and they come and be with you in 10 minutes' so that you're actually physically going to intervene here.*
>
> AND
>
> *N5: I actually ask them if they want me to do that because I think we're here to do what people want. I suppose I shouldn't maybe sometimes, but if that's what they want and they feel they can't do it, then I'll do it.*
> *N3: Why not?*
> *N1: If it works.*
> *N5: I just think that if there's somebody that they can ... you know a neighbour or anyone who can be there quite quickly.*

This reflects the literature highlighting the complexity of the telephone triage task and the difficulties nurses experience in terms of confidence and levels of certainty about their decision-making (Mayo 1998; Holmstrom 2007). The problematic nature of providing reassurance in 'value-sensitive' cases is also reflected here and highlighted by Stacey et al (2005).

Advice Giving

The group agrees that when emergencies have been excluded, they relax and feel able to interact differently with the client, establishing a more conversational strategy with the client intertwined with advice:

N4: I think you probably relax, once you get passed a few questions and you get an idea where it's going, I think you probably do calm down and phrase things differently as well, because you know what you're expecting to hear. If you hear something different then it throws you out I think...
N5: .. wakes you up a bit doesn't it?
N4: It becomes more of a conversation doesn't it?
N3: Yes.
N4: Maybe with a few little personal things in ...
N5: ... yeh, bits of advice in while you're asking questions as well almost.

The group emphasise this as good practice, as is the practice of offering coping advice during the call. The group's strong criticism of the nurse's failure to do so in the sample call data, is most prevalent:

N4: And she's not had any advice either, she's not giving any advice on how to cope with them.
N1: She could have been giving little bits of advice as she went along, but there were no...
N6: Especially when you see what the call reason was.
N4: mm, there's just nothing.

Poor interaction

Although the calls were not chosen to exemplify poor practice, they were regarded as such by the group. Poor practice is highlighted as failing to offer coping advice appropriately (above), lack of thoroughness in ensuring a child's physical condition, inappropriate timing of questions, lack of empathy and inappropriate attitude.

N1: she hasn't asked about colour, breathing, there's just nothing in there at all.

N3: And even in the call handling bit of it, there's all this going on about the children and the nurse that's doing the call handling says 'Can I just ask how you came to know about NHS Direct'.

AND

N5: I think there seems to be no regard as to what this person at the end of the phone is going through and what they want and...

AND

N1: I mean, that is his choice. If he feels he wants to take his baby to casualty, but I just thought she was really stroppy with him and there was no need for that.

The difficulties of providing reassurance is apparent here and is highlighted in the work of Stacey et al (2005) who identify the barriers that such difficulties can present during a telephone triage interaction. In addition the focus group display a tacit recognition of the value of using empathy in their telephone triage interaction; there is implicit recognition of the need to be sensitive to the changing feelings of the caller as Rogers (1975) highlights in relation to institutional talk. There is also an implicit support for the observations of Weir and Waddington (2008), that nurses should show their caring attitudes whatever the context and the need for NHS Direct nurses to use their voice to convey empathy and emotional support.

Strategy

Strategies for ensuring good interaction with callers are shared among the group with some nurses reporting actual sentences they would use in their interaction:

N5: I sometimes say that, 'if you're anxious baby will think something's wrong, so they start getting anxious and its a big vicious circle'.

N6: But also to let mum know that she's not doing anything wrong so that she doesn't feel guilty and she's responsible for this situation.

AND

N4: and sometimes I tell them a bit as well, coz if you know, you say, well I say, 'you know, I've had 2 babies with colic and I know what its like and you know, I used to wait for my husband to come in through the door and I'd give him the pram and send him out with it because I couldn't stand it any longer' and then you've got them on your wavelength as well and they think 'well she's a nurse and she does that so ...' you know, this is normal .

N5: that's right, it's not something you've done wrong and it might seem nothing, but its just today and tomorrow will be different, you know.

In reaction to the call data, the group acknowledge that the questions sometimes appear irrelevant, causing potential agitation. Nurse 6 offers her strategy for trying to avoid this which is met positively by the group:

N6: there was no explanation of why you're asking questions and the thing that happens with the call handlers now is when you get somebody who says, 'I just want to ask you these questions, they might seem irrelevant, but we are excluding emergencies'. To my mind it's a sentence that stops getting people aggitated. 'Why are you asking me this, why are you asking me if they're blue when all I want to know is ....'

The lack of empathy that the group feels is apparent in the call data is reiterated by nurse 5 who emphasises the position that should be taken:

N5: I think, to me in both of them, there was no, sort of 'you've rung for help, this is what I'm going to do with you and look at how we can help?', there's no taking on board 'I understand that you're going through all this and I'm going to try and help you by doing this' you know.

AND

N1: …. but I always say, 'look, you know I can't see him, you're my eyes, we just need to make sure'.

AND

N5: I like to try and envisage that room that they're in, do you know what I mean,….

Procedure

In their reaction to the call data, the group touches on the impact that following procedure has on the interaction with the caller:

N3: The nurse has got to tick the boxes whatever's going on at the other side - its irrelevant. 'You get on with whatever you're doing. It might be chaotic there but I've got to tick this paperwork'.

The limitations of the algorithm to guide nurses in particularly chaotic situations is also raised:

N3: It doesn't tell you anything in the algorithm to tell.

There is amusement shared by the group as they consider how appropriate, or otherwise, some questions are from both current and previous versions of the software:

N3: And even in the call handling bit of it, there's all this going on about the children and the nurse that's doing the call handling says 'Can I just ask how you came to know about NHS Direct'.

(general laughter)

N6: That was the last question that you had to ask wasn't it? it used to be the question 'how did you first hear about NHS Direct?' that was the statutory question the same as the ethnicity is now. 'For Government audit, can I just ask what colour your skin is?' That was one of the questions the call handlers had to ask.

Calm/reassurance

The group highlight the need for good skills in being empathic, particularly in relation to calming down and reassuring callers. As mentioned before, there is

agreement about the importance of establishing a mental picture, listening and picking up cues in maintaining a good interaction. The skill of extracting required information without asking direct questions is reiterated:

> *N1: ... and even when you're checking the demographics, you know your understanding to them, although you need your information, you can get it out of them appropriately without saying you know 'name, date of birth' you know like a sergeant major, if you give an empathic tone and you come across like that you'll soon, you can hear them coming down, calming down.*

The skill of calming down and reassuring clients without seeing and touching is clearly exemplified by Nurse 6 who explains how, in a one to one clinic interaction, a nurse can show by example and smile as well as verbally give information:

> *N6: It's like when you get across to people that you know when you are so tense, when somebody else takes the baby off you and the baby shuts up, it's about explaining that over the phone. You can do it in a clinic, it's when you get a distraught mother in a clinic, then you take the baby off them and they calm down and smile and you can say, 'it's because they can feel how tense you are' so sometimes it is good to put them down, get rid of the tension*

The group agree with Nurse 4 in her description of how the anxiety of the parent can easily transfer to the nurse and the skill necessary to calm things down right at the start of the call:

> *N4: think it happens in the first minute or so as soon as you start talking to them doesn't it really? and how you sound and what you say and you either calm them down or wind them up and you can find yourself getting wound up by a wound up mum on the end of the phone and its quite a skill to calming it down.*

Again this reflects the points emphasised by Stacey et al (2003) and Weir and Waddington (2008) as discussed above. Nurse 1 reminds the group that reassurance has to be balanced with the need to ensure safety:

N1: … Did he go floppy? Did he choke?' you know. Yeh, you need to reassure mum but you need to make sure that that baby has not had a choking episode or gone floppy or ...

Empathy/mental picture

The need for empathy runs throughout the group's discourse even in relation to eliciting demographic information as mentioned above. Creating a mental picture is seen as key to establishing an empathic relationship:

N2: I think you get a mental picture of it as well don't you?
N5: Yeh you do,
N2: Where they are and what sort of circumstances they're in.

AND

N5: … Just visualise what this scenario is, and what's going on in this house. Are there like 3 year olds screaming and jumping around and crayoning on the walls as well and the baby, and you know, what is the situation right from the beginning.

This supports the findings of Pettinari and Jessopp (2001) who describe the process of visualising a caller and their situation that NHS Direct nurses utilise. In addition, Monaghan et al (2003) suggest this visualisation process explains a more rapid response when the nurse has encountered a similar problem as that presented by the caller, in previous professional practice. The nurses in this focus group however, imply that the visualisation can be based on personal experience in addition to professional experience.

Listening

The ability to listen is regarded as a crucial skill in the interaction between nurse and caller which is affected by needing to concentrate on reading the information for the new practitioner:

N2: It's hard as well, coz I'm new, and when you're reading what it says, you're not really listening into what they're saying because you're

concentrating on reading what it says so you get like a lot of pauses then and it don't flow then does it?

Nurse one repeatedly refers to 'safety' and the group agree with her strong reaction to the sampled call data as she highlights the dangers of failing to listen:

N1: and you think of it from a safety point of view, if they're not listening, if they're not engaging with that caller, what are they missing, you know? If that's they're first contact with our service, they're not going to ring it again.

AND

N1: … How was he? Was it actually a febrile convulsion? If it was then he does need more investigations, you can't just, you know, yeh kids do have fits, but it might need more.... but again, like I say, she's not listening.

Picking Up Cues

Some of the points related to picking up cues are discussed earlier in the 'rephrase/ask around' section. The group agree with the Nurse 1 how, in picking up cues from the call, the nurse can ask questions to validate the accuracy of her assessment which will potentially lead to another area of questioning:

N1: But there are cues around it, you know, how are they relating to the baby. I've had one where baby was screaming in the background and mums not relating to this child at all, I said 'do you want to go and pick her up', 'no I'm absolutely sick of her' sort of thing, so then I start asking more questions ...

(murmuring agreement)

In reaction to the call data, the group criticise the nurse's inability to pick up on the level of the caller's distress:

N3: There's chaos and mum's distraught at the other end and even the second nurse is offering to cut off again and say 'well I'll ring you later. Get on with it and I'll ring you back when he's a bit quieter'.
N5: And that's why she's rung. I can't carry on by myself

N1: precisely
N6: And mum's just said, hasn't she, that he looks like something's really wrong with him - and she gets 'I'll ring you back'.
N5: yeh, she's not picking up on any of that.

Wind up/alarm/concern/frustration

In addition to identifying the impact a caller being 'wound up' can have on the nurse at the beginning of a call, the group agree that the process of carrying out the service under its given protocols, can 'wind up' callers:

N5: I think the process winds them up as well.

(general murmuring agreement)

N3: when they've rung and they've hung on and someone's gone through all the questions with them, and we ring them back and go through what they think are the same questions and sometimes they'll say 'well I've been asked all these things before' you know, they're a little bit ....

AND

N2: I think some of the questions as well, if its a first time mum, it can make them alarmed as well, you know coz they'll sort of say, what are you asking me that for

... (murmuring agreement)

... should this be happening, although you're trying to say, find out what the problem is, some of the questions can be quite alarming I think.

The ability for the presence of the computer system and process to alienate callers at NHS Direct and hinder effective advice giving is raised by Hanlon et al (2005) who found that the process of eliminating a worst case scenario can cause concern to callers who worry their particular problems have not been identified.

The group agree with Nurse 3 that sometimes, the gentle calming approach doesn't always work:

> *N3: there are occasions though aren't there, when they come on, on the defensive even though you're trying to be gentle to them, they come rather protective or demonstrative or whatever and sometimes, whether it's their personality or just ... em... some of them seem frustrated at the fact that they've rung and, when we do the doctor calls, that they've rung for a doctor and have ended up with a nurse and so sometimes they're a little bit put out.*

AND

> *N1: yeh, and 'do you think if he'd got a breathing problem that I wouldn't have rung 999' that's what they say, but I always say, 'look, you know I can't see him, you're my eyes, we just need to make sure'.*

Nurse 2 identifies how repetition of the point of the call, in the sample call data, is an indication of the caller's agitation:

> *N2: She was obviously agitated as well coz she kept saying 'no its just this coughing'.*

Skill

In sharing strategies of considered best practice for establishing good interaction with the caller, the group reiterate the skill required to deliver this service. It runs throughout their discourse and is crystallised by Nurse 1:

> *N1: ... otherwise anybody could do this job. Anybody could sit there ticking those boxes, you know...*

Safety

The group were asked about their opinions with regard to offering structured advice about coping with crying, such as that contained within 'The Period of Purple Crying' programme. The group show discomfort with the idea of giving this advice over the phone and did not object to Nurse 4's comment that:

N4: I think it's very difficult to actually say, 'it's OK to walk away' and leave them for a certain amount of time. I think that's quite dangerous over the phone. You can't really....
N6: I think it's safe to say that if they're crying ...
N4: ... you don't have to pick them up.
N6: ... they are telling you that they're still awake. It's far worse when a baby stops crying and is quiet. The moribund baby is the one you worry about. A crying baby is full of air and ...

The dangers of not listening are mentioned earlier and the dangers of making assumptions are also raised in response to the sample call data:

N2: Seems like she's assuming here that he's not well because he's had his injection.
N3: But even so it can be something from the injection that needs a lot more investigating.

The group agree with Nurse 1 as she describes a sense of anxiety in the interaction until emergencies have been excluded after which the nurse feels more relaxed:

N1: You've ruled out all your emergencies and then you, like you say, you do feel yourself relax a bit, coz when you've got a tiny baby on the phone you do want to make sure that that baby's safe, so you do get those immediate questions out of the way. You do feel yourself tense because they're checking things for you like 'does the rash fade', you know they're anxious. They've got a phone, a baby, so you do feel yourself mentally relax.

Men

The discussion did not naturally turn to consider male caller's and was raised by me as a direct question. 'Men' has been included as a code because of this but I suspect, this would not have been the case had I not asked the question. The brief discussion yielded some disagreement about men's coping ability and their interaction with the nurse:

N2: I think men sometimes find it harder to cope don't they?

(murmuring agreement)

N4: I think it depends on the men. Some of them are really good and some of them are... well they're just like the women really you know some of them are coping really well and some of them aren't, I don't think they're really any different.

N1: Although they'll come on the phone and they've not got all the information that you're wanting so rather than put mother on, they proceed in 'Does he do this? does he do that?' and I think, 'do you want me to speak to them?' 'No, no', you know , he's the boss kind of thing.

N3: You sometimes get house husbands that's actually been looking after the children and know the children better than the mothers do really so its....

M: Would you ask a man how he's coping?

N3: Yes, in the same way.

Further exploration of the 'way' that is referred to here did not take place and was not questioned.

Theme Three: Nurses Perception of Their Role in Using the Crying Baby Algorithm and dealing with the calls.

Sub-themes:

- Personal, professional background & experience
- Procedure & guidelines
- Safety
- Skill and Accountability
- Caller reaction

Safety/danger

Ruston (2006) describes how nurses combine their professional and tacit knowledge with the algorithm in order to ensure safety through a more thorough assessment than the algorithm offers and how the final dispositions will be subject to overriding, underriding or manipulation in order to achieve this and to

avoid managerial control. As previously mentioned, the issue of upgrading and downgrading when using the 'crying baby' algorithm, is a cause of some tension and disagreement in the group and highlights a difference of opinion in the nurses' perception of their role in using the 'crying baby' algorithm. At one level, the group are acknowledging how very cautious the algorithm is, but are extremely hesitant to support the nurse who offers her opinion about downgrading.

N4: I think the crying baby one, there's not many times when you have to upgrade. There's some but not many because it does tend to be very very cautious ...
N3: Yes it is
N4: ... and I think probably, I mean on a night time they probably tend to downgrade a bit more just to see, you know, if its 4 o'clock in the morning, you'd probably downgrade more to see them through to GP or health visitor in the morning.
N6: Does it matter how old they are?
N4: yes
N5: I don't think I'd probably downgrade baby things as much as....
N4: I mean under 6 months old you'd have to be ...
N5: (interrupting) You see I'm really cautious with anybody under one ...
N4: ... to be really sure to downgrade (overlapping)

Although the conversation took place between only the two nurses in the group, there is a sense that the practice described by Nurse 4 is not safe. Nurse 5 reiterates her concern about downgrading final dispositions from the 'crying baby' algorithm which leads to Nurse 4 reminding her and the group of the function of the 'worsening advice' as discussed previously:

N5: I think if I ever looked at my statistics for upgrading and downgrading, I bet most of my children ones if anything would go up rather than down. I think there'd be very very few that would go down. I mean if anything, it might be that if it was GP 6 hours and it was 1 o'clock in the morning, maybe somebody else would say 'well hang on till your own doctors open' which would obviously be over 6 hours but feel comfortable that's alright I would probably send it through and ...
N4: But you'd give that advice with worsening ... you know if it continues ...

N5: ... Oh yeh I would, yes that's right yes.
N4 : ... ring the GP straight away.

However, the group agree on the action to be taken if there is a fear that a child may be harmed.

N4: It makes your alarm bells sound, then and you know that you need somebody to see that baby and do something for mum and baby so you'd either be sending them to the GP or A&E or ...

N3: ... even send an ambulance down for them...
N4: ... if you were that concerned they were going to harm the child.

The issue of safety and dangerousness is raised in the discussion about giving advice such as that contained within the 'Period of Purple Crying' programme and is discussed above. The use of the term 'safe' in this context refers to what it is considered safe to advise. Whereas, Nurse 1 speaks about safety in a purely clinical sense, referring to the safety of the baby:

N1: You've ruled out all your emergencies and then you, like you say, you do feel yourself relax a bit, coz when you've got a tiny baby on the phone you do want to make sure that that baby's safe, so you do get those immediate questions out of the way….

As was highlighted previously, Nurse 1 sees the importance of reassurance when using the 'crying baby' algorithm but is very keen to reiterate the importance of ensuring clinical safety first:

N1: They didn't establish ... you know they said 'he's wheezing, coughing as though he's choking' she's not really, the nurse whose actually call handling , not really explored that, you know, 'keep him calm, put your finger in his mouth', you know he might well have been choking. I'd want to know 'how is he? Did he go floppy? Did he choke?' you know. Yeh, you need to reassure mum but you need to make sure that that baby has not had a choking episode or gone floppy or ...

Rephrase/ask around/wouldn't ask

Despite the group's discomfort with downgrading dispositions emerging from the 'crying baby' algorithm, they were unanimous in their decision to not directly ask the 'coping question' as mentioned previously. The means by which parental coping was assessed varied among the group members from rephrasing the question, asking questions around it to not asking it at all:

N3: I rephrase it.
M: You rephrase it.
N3: I usually say, 'have you got to the state where the baby is getting on top of you? … The majority of times they say 'no, no, you know, that's why I've rung, I've rung because I'm in control and just wanting to know what I can do, but no I've not got to that state at all'. I've not had anybody that's been offended by it or sounded to be offended.

AND

N5: I think I've maybe sort of rephrased it, I don't think I've actually said you know 'shaken' or...

M: mm mm
N5: ... I think I might have said something sort of similar 'do you feel as if you can't cope with it any longer' or 'how are you feeling in yourself with it' and then looked at whoever else can be around or can come.

AND

N4: and I think for right or wrong, I've never asked that question direct either, but more, young mums who are by themselves who sound fraught, I'm more likely to ask questions about that, who's about, who can they ring, who can they get into help, but I'd never ask a young mum that because I'd think she'd be really offended by it.
N1: But there are cues around it, you know, how are they relating to the baby. I've had one where baby was screaming in the background and mums not relating to this child at all, I said 'do you want to go and pick her up', 'no I'm absolutely sick of her' sort of thing, so then I start asking more questions ...

(murmuring agreement)

N1 :... how are you managing, are you on your own, so you can pick it up other ways without .... otherwise anybody could do this job. Anybody could sit there ticking those boxes, you know...

N4: If you just say something like 'you must be really exhausted if she's been crying that long' all sorts comes out, suddenly the flood gates open.

AND

N1: I wouldn't ask that, I'd be picking up other cues or maybe saying 'how are you feeling?' or ... and they'd usually tell you, 'I'm beyond it or I'm at the end of my tether' they're the kind of things they say and they say them right at the beginning, so its actually listening to them they whole part through the call. I don't think you need to ask that question.

Nurse 1 begins to alter her position as the discussion continues, moving from an emphatic "I wouldn't ask that…" to:

N1: ... I have asked it, but not necessarily with that particular call. I will have asked it, I know I've asked it….What I'm saying is that I don't ask it routinely. But I'm careful.

There is no mention of clinical judgement or need to ensure safety within this discourse. In their reaction to the sample call data previously, the group agreed that it is important to ensure the baby is safe before going on to offer reassurance and the nurse in the sample call was criticised for not doing so. However, it seems that asking the 'coping question' is not associated with ensuring safety of the child. The same uncertainty about the importance of a question is apparent in the discussion that ensues about asking whether there is any hair wrapped round the baby's fingers or penis if it is a boy. It seems that the reluctance to ask the question if founded on the perception that the nurse imagines the caller would have of her as the group agree with Nurse 5:

N5: I sometimes have to say, ' the reason I'm asking this is because apparently some people have turned up in casualty...' otherwise they must think 'she's barmy' (laughs). It's just about little threads of hair that you've not noticed that are painful…. Well that's why I sort

of ask it like that now because I think ... (laughs)... what a funny question.

N1: It's unusual.

N5: I usually just say, 'are all the fingers and toes alright?' and ask them that.

N3: Have you asked them to check the penis to see if there's any round that?

N5: No, I can't really imagine how they'd get it round there (laugh).

N3: Well it's one of the questions I find awkward.

The question is seen as awkward and part of it is not asked because the nurse cannot see how the problem might occur. Although it is not said, it may be that the 'coping question' is not asked directly because the nurses are unaware of the potential seriousness of the problem.

Pick up cues/interpretation/language

The main issues in relation to picking up cues and interpretation have been discussed in other areas and will not be repeated here, other than to say that the bulk of the discussion around picking up cues relates to not needing to ask the 'coping question'. The need for empathy, envisaging the social context and picking up on the level of stress experienced by the caller are all considered essential in the nurses perception of their role in using the 'crying baby' algorithm and dealing with the calls.

Difficulty

The ability to intervene positively with calls involving crying babies appears under this code and theme as it has done previously, particularly in relation to the absence of physical presence with the client:

N5: I think for me this is when nursing on the phone just gets hard, because you can't just say ...'it'll be alright' and just the tactile sort of things you would use, it's just so hard is not it, because you know there's someone there who desperately just wants someone to sort it out.

AND

N6: It's like when you get across to people that you know when you are so tense, when somebody else takes the baby off you and the baby shuts up, it's about explaining that over the phone. You can do it in a clinic, it's when you get a distraught mother in a clinic, then you take the baby off them and they calm down and smile and you can say, 'it's because they can feel how tense you are' so sometimes it is good to put them down, get rid of the tension.

Strategy

Strategies that are shared in helping to deal with calls relating to crying baby, particularly in relation to giving reassurance and calming down the caller. Relating to personal experience and highlighting the normality of crying is discussed as is the need to try and ensure the mother does not feel guilty. There is no indication that the basis for these strategies emerge from the algorithm itself, although, as discussed earlier, there are advice sections concerned with soothing a baby which the group agreed would not necessarily be given to the caller.

N4: and sometimes I tell them a bit as well, coz if you know, you say, well I say, 'you know, I've had 2 babies with colic and I know what its like and you know, I used to wait for my husband to come in through the door and I'd give him the pram and send him out with it because I couldn't stand it any longer' and then you've got them on your wavelength as well and they think 'well she's a nurse and she does that so ...' you know, this is normal.

AND

N5: I sometimes say that, 'if you're anxious baby will think something's wrong, so they start getting anxious and its a big vicious circle'.
N6: But also to let mum know that she's not doing anything wrong so that she doesn't feel guilty and she's responsible for this situation.

In reaction to the sample call data, Nurse 5 again reiterates the need for the nurse to empathise and regarded this as absent from the sample call:

N5: I think, to me in both of them, there was no, sort of 'you've rung for help, this is what I'm going to do with you and look at how we can

help?', there's no taking on board 'I understand that you're going through all this and I'm going to try and help you by doing this' you know.

Intervene/sort it

The need to make things better for the caller is apparent in the reaction to the sample call data and as well as identifying the lack of physical presence as an obstacle to achieving this, the group agree with Nurse 5's strategy for intervening on difficult calls involving crying baby:

N5: I think for me this is when nursing on the phone just gets hard, because you can't just say ...'it'll be alright' and just the tactile sort of things you would use, it's just so hard isn't it, because you know there's someone there who desperately just wants someone to sort it out.

AND

N5: I think if it wasn't anything that's quite as extreme as that, I think I would be like 'do you want me to ring somebody who could come to you', you know, coz they maybe just don't feel that they can you know do anything more other than ... so they maybe don't want to ring mum in law or sister or somebody, but if you said, 'do you want me to ring and they come and be with you in 10 minutes' so that you've actually physically going to intervene here.

Caution

The discussion in relation to caution is the same as appeared in 'Interaction between Nurse and Caller', that the 'crying baby' algorithm is inherently cautious and downgrading is regarded generally as potentially unsafe. The difference under this sub-theme is that this exchange appears under the same code as a comment from Nurse 1 that she does not ask the 'shaken baby' question routinely, but that she exercises a degree of caution:

N1: ...What I'm saying is that I don't ask it routinely. But I'm careful

This crystallises the paradox that is apparent, and referred to earlier, about adhering to the cautious algorithm to ensure safety, but then not doing and relying on other means of assessing when it comes to the 'coping question'. This raises important questions relating to the balance between the use of experiential and tacit knowledge and the information contained within the algorithm and relates to the key points raised by authors including Hanlon et al (2005), Greatbatch et al (2005) and Morrell et al (2002) and is discussed in more detail in Chapter Six.

Advice Giving and *upgrade/downgrade*

The section under this theme relating to advice-giving is the same as under theme one: use and differing use of algorithms. The group are satisfied that there is some advice they would not give and recognise, in their reaction to the sample call data, the importance of intermingling advice throughout a call. The same applies to the discussion of upgrade/downgrade which is highlighted elsewhere.

Mental Picture and *reassurance*

As described elsewhere, the group agree with Nurse 5 of the importance to establish a mental picture when dealing with calls relating to 'crying baby' which helps them navigate their way through the algorithm:

N5: I think that's why I like to know at the beginning. Just visualise what this scenario is, and what's going on in this house. Are there like 3 year olds screaming and jumping around and crayoning on the walls as well and the baby, and you know, what is the situation right from the beginning.

N4: and I think for right or wrong, I've never asked that question direct either, but more, young mums who are by themselves who sound fraught, I'm more likely to ask questions about that, who's about, who can they ring, who can they get into help, but I'd never ask a young mum that because I'd think she'd be really offended by it.

N1: But there are cues around it, you know, how are they relating to the baby. I've had one where baby was screaming in the background and mums not relating to this child at all, I said 'do you want to go and pick her up', 'no I'm absolutely sick of her' sort of thing, so then I start asking more questions ...

(murmuring agreement)

Again the need to provide reassurance by drawing on personal experience of coping with crying babies and the need to emphasise the normality of the situation features within this sub-theme . As before, it is tempered by the need to ensure safety first.

The same discussion relating to men as appeared under ‘Interaction between nurse and caller’ also appears under this theme.

Chapter Conclusion

Theme One: Use and Differing Use of Algorithms.

The focus group data reveal a great deal of talk about clinical experience, judgement and knowledge linked with the understanding that the algorithm is only a guide. Much of the discussion revolved around the skill involved in interpreting what really is happening at the other end of the phone, interpreting what the caller really means and also how the caller interprets what's been asked of them. This was agreed as a key area of difficulty by the group.

The group agreed that length of experience working at NHS Direct informed how the algorithms are used. Confidence is taken from the nurses' past experience eventually and from personal background. However, there is a stage of heightened difficulty at the start of their work with NHS Direct where handling the technology and getting used to the method of communication becomes all encompassing for a while. The group agreed that after this difficult initiation period, previous experience, knowledge and expertise were recalled and used as confidence is gained.

Upgrading and downgrading was linked with tacit knowledge. But in relation to children there was mainly agreement that downgrading would be unusual. However, there was not complete agreement and a tense discussion ensued when one member of the group justified occasions when she might downgrade.

Among the group, there was a strong sense of traditional nursing responsibility and accountability and the need to justify what decisions have been made. However, there was also the acknowledgement that adhering to the algorithm will yield safety. Diverting too far from this was regarded as unsafe and the need to be cautious in relation to children was reiterated.

However, with regard to ‘advice giving’ information on the system, specifically in relation to ‘crying baby’, some members of the group stated they would not give or felt uncomfortable giving the advice. This was not regarded in the same way, in terms of safety and caution, as progressing through the interrogative sequence of the call.

It seems that if the status of the final disposition is low in terms of need for further referral, then the advice giving is perceived as an area that can be treated differently by the nurses. Missing sections from the ‘advice giving’ sequence is not regarded with the same gravity as missing sections from the interrogative sequence.

Theme Two: Interaction between Nurse and Caller

The group shared strategies that they personally identified as helpful, in many cases ‘reporting’ the actual sentences they used to reassure or calm the caller. Difficulties in interpreting the situation were discussed in relation to not being able to see their client. The practice of rephrasing or asking around an issue was briefly alluded to as was the practice of giving advice.

There was quite a strong reaction to the ‘call data’ which was read out. It was regarded as very negative in terms of nurses’ ability to interact appropriately with the caller. This was present with regard to following procedure, where, on occasions, adhering to the algorithm was regarded negatively and unsatisfactory as it didn’t ‘tell you anything’.

The skill and awareness of the need to be empathic is prevalent, particularly in relation to calming down and reassuring clients. Establishing a mental picture, listening and picking up cues were all seen as essential to this interaction. However, the actual process of progressing through the algorithm is identified as causing some frustration, alarm and concern to the caller. This was described both in relation to the callers' expectation that is speaking with a doctor, not a nurse and the nature of the interrogative sequence which was alluded to as both repetitive and irrelevant at times. Safety in this context refers clearly to the safety of the child.

The group agreed that there is a sense of relaxation when emergencies have been excluded during a call and that the tone of the call can alter as a result.

Theme Three: Nurses perception of their role in using the 'crying baby' algorithm and dealing with the calls.

The issue of safety/danger is given much attention in this theme, both in relation to professional safety and adhering to the inherent caution present in the algorithm and in relation to the physical safety of the child. However, when the discussion moved to focus on the 'coping question', a stark contrast was presented which in some way contradicted the previous agreements on being cautious. In relation to the 'coping question' the discussion focused on rephrasing the question and the accepting of 'asking around' or blatantly not asking the question. References to clinical judgement are absent here. The need to ask the 'coping question' directly is replaced with suggestions of how to prompt a reaction that tells the nurse what they need to know. Rephrasing is recommended as a means of avoiding offence.

A further paradox is contained within the discussion about advice giving where again, as with theme one, the group were quite contented to remark there was

some advice they would not give. Offers of alternative advice were put forward, some of which included that contained within the algorithm but clearly not recognised as such.

However, the notion of giving appropriate advice during interaction is regarded as important in the group's reaction to the call data, as is the preference of intermingling this during the call. The need to reassure callers is dealt with briefly within the context of this theme, with one nurse stating her preferred empathic method of using her own experience as a mother to reassure the caller that what is being experienced is normal, and another putting reassurance at a lower priority to assuring baby's physical safety. The moderator asked about the possibility of giving information similar to that contained with various health promotion leaflets which advise parents about coping with crying, and this was treated cautiously by the group.

This chapter has presented data analysis of Phase Two of this study which were collected from a solo focus group, the basis for which was founded in the results from Phase One of the study, thus continuing to adhere to the flexible design and grounded theory strategy. The chapter has revealed the complexities that inform how and why nurses use the crying baby algorithms and make clinical judgements. Essential dichotomies of practice emerge from the analysis in relation to NHS Direct nurse practice and decision making:

- The crying baby algorithm is recognised as cautious and this is respected *until* emergencies are excluded and remaining issues are non-medical.
- The algorithm is regarded as safe and valuable *but* also the cause of alarm and frustration for callers.
- Nurses recognise the need to be safe at one level by adhering to the algorithm *but* do not regard it unsafe to not ask/rephrase/ask around the coping question and not always provide advice as indicated.

These dichotomies will be critically discussed in more detail in Chapter Six.

CHAPTER SIX: Discussion and Findings

Introduction:

This chapter will consider the most recent and relevant literature concerning the business of NHS Direct within the current policy and political context in relation to the findings from this study. The study aims to analyse how nurses at NHS Direct use their clinical judgement and practice to make different use of the crying baby algorithm and how this difference impacts on nurse/caller interaction. Using the crying baby algorithm as an exemplar, this study considers how telephone advice is given to callers ringing for non-emergency advice about someone in their care and what nurses perceive to be their role in using the algorithm within the understanding and context of the organisation.

This study is small scale and findings are drawn from a small sample of calls and a single focus group and discussion of the findings must be seen within this context. Findings relating to the use and different use of the 'crying baby' algorithm and nurse/caller interaction will be considered alongside recent research carried out since this study commenced. The chapter will highlight the nature of advice giving by telephone using an algorithmic framework in relation to the practice of parental education and support provision.

Attention will be drawn to the medical model, nursing culture and the social, cultural and policy contexts in which health professional judgements are made. Consideration will be given to the development and use of professional practice, knowledge and information within a technological environment and the nursing subject positions this influences.

A key focus of this chapter will be the context of NHS concerns for managing safety and risk and minimising uncertainty. This will be considered in relation to the influence on professional decision-making with a particular focus on

decisions of a value-sensitive nature, raising questions about why nurses hesitate or choose to step away from asking difficult, qualitative questions within a highly structured, clinical questioning environment. This will be considered with particular reference to child protection practice.

Use and Different use of the NHS Direct 'crying baby' algorithm

This study has found that NHS Direct nurses use the 'crying baby' algorithm in three ways; direct use of the algorithm, adding to the algorithm, covert completion of the algorithm. The different use of the algorithm is influenced by background and experience as a nurse, a specialist and as an NHS Direct practitioner. Length of experience working at NHS Direct informs how the algorithms are used. Confidence is taken from the nurses' past experience (eventually) and from personal background. However, there is a stage of heightened difficulty at the start of their work with NHS Direct, where handling the technology and getting used to the method of communication becomes all encompassing for a while. After this difficult initiation period, previous experience, knowledge and expertise are recalled and used as confidence is gained. Findings suggest that the NHS Direct practitioner prefers not to deviate from the algorithm until experience allows them to put their "nursing hat back on" and re-engage with previous professional experience and tacit knowledge.

In contrast, O'Cathain et al (2004b) found that there was no evidence that the clinical background of nurses (hospital or community), their length of experience in NHS Direct, range of experience or gender, affected triage decisions. However, an earlier study by Monaghan et al (2003) showed that there were indeed variances in practice between children's nurses and general nurses when triaging children at NHS Direct. Greatbatch et al (2005) agree and describe how nurses privilege their own knowledge and expertise.

Impact on nurse/caller interaction

Direct use of the algorithm, where the exchange is driven by the words on the screen tend to feature long sections of interrogative sequence. This study has found that direct use of the algorithm can cause frustration in some callers with evidence of advice resistance and lack of agreement. In a study of a similar style telephone triage system in USA, which uses computer, complaint-driven algorithms and registered nurses trained to take calls in a similar fashion to NHS Direct, it was found callers had a lower satisfaction rate with the nurse advice service compared to advice given by an on-call paediatrician (Lee et al 2002). This was noted by the authors as being of some surprise especially since earlier studies (Curtis et al 1981; Perrin & Goodman 1978) had demonstrated that nurses can be effective handling telephone advice calls and in some respects preferred advice from doctors because doctors were not as strict about asking all the 'necessary' questions. Lee et al (2002) highlighted how, in follow-up interviews with callers:

> "… they tended to complain that the nurses 'asked too many questions' and 'took too long'." (pg 870)

This study has found that even when nurses announce the fact that they are about to run through a long list of questions, this does not seem to assuage the caller's apparent frustration. Indications of caller frustration in the category, 'direct use of the algorithm' were more prevalent than in the other categories.

Lee et al (2002) suggest that the quality of calls used to be judged by comparing it to predefined criteria which was often generated by panels of experts. They go on to state:

"These criteria assume that the quantity and quality of questions, the completeness of information gathering and the thoroughness of making sure the caller understands everything is equivalent to a well-handled call and a satisfied customer". (pg 870)

The authors suggest that there is a dichotomy between organisational assumption and the caller's opinion of good call. The University of Sheffield's Medical Care Research Unit's (2001) examination into caller non-compliance with advice is cited in the National Audit Office report (2002) emphasising the expectation of some callers, to receive practical and emotional support and the degree to which this need is met, determines the degree to which advice is accepted.

The data from this study indicate that, rather than the algorithms being behind a "well handled call", it is the nurse's experience, skill and ability to interpret what is really happening at the other end of the phone, what the caller really means and how the caller interprets what is being asked of them, that determines the success of the call. Indeed, in the absence of visual social context, the nurses at NHS Direct have to gain correct information through other means such as creating a mental image of the caller (Markland et al 2007). Crouch (1992) highlights the need for careful questioning and the difficulties of interpretation that arise when the caller may dismiss and not report a symptom the nurse would regard as important. In face-to-face triage, there is, at least, more of a chance that the nurse can observe the manifestation of a symptom without always requiring the patient to be aware of its importance.

This study has found that on occasions, adhering to the algorithm is regarded negatively and unsatisfactory as it doesn't 'tell you anything'; adding to and moving in and out of the algorithm, is regarded by the nurses as better practice. This is supported by Hanlon et al (2005) who found that, if the computerised process was made obvious to callers, difficulties were experienced with nurse/caller interaction in that it would sometimes provoke an 'alienated' response. They go on:

> "As such, in the interests of maintaining the nurse-caller relationship, nurses utilize their practical rationality and use CAS selectively" (p158)

Decision Making and Advice Giving: manipulating the algorithm

This study supports that of Ruston (2006) and has found that the position of the algorithm as a guide and aid to support clinical decision making is strongly argued by the nurses at NHS Direct and the difficulties of reaching the level of practice where this becomes the case, eloquently described. As previously mentioned, adding to the algorithm and interspersing questions with conversation and advice is seen by NHS Direct nurses as good practice but does require knowledge of where the algorithm is heading. Experience influences this and allows nurses to pre-empt the questions contained within the algorithm. This again supports Ruston (2006) who identifies how nurses manipulate the algorithm in a way so as to reach a different end point from the one recommended by the software by:

> "'Knowing' the algorithms well enough to be able to avoid the 'pitfalls' associated with ticking the 'wrong box'" (p266).

Adding to the algorithm, represented by the second category in this study, seems to present more opportunities for offering coping advice throughout the call and more space for the caller to talk. The algorithm driven calls, on the other hand, are not 'leisurely' and therefore, the environment for giving unprompted advice on coping may lead to rejection of advice (Silverman 1997:152). As shown by some of the sampled calls, the nurse at NHS Direct does not always leave the call when the callers stated expectation is met, and especially when the caller has indicated difficulties with coping or expressed frustration at the behaviour of their baby. The algorithm will prompt the nurse to give advice about soothing which can prove difficult when the caller has not stated this as a problem and this has not been part of the original shared alignment between nurse and caller.

Given the 'rapid fire' nature of the questioning sequence in the calls which fall into the first analysis category of 'direct use of algorithm', the offer of unprompted coping advice could potentially result in the caller rejecting the advice. Advice about caring for babies, in common with advice about sexual behaviour, can be interpreted as imposing a moral category on the caller and lead to advice resistance (Heritage and Sefi 1992; Silverman 1997). This echoes the position taken by Sacks (1972) who describes how we ascribe deviance to the person whose behaviour is not synonymous to the category to which they are assigned.

As highlighted in Chapter Two, this raises important questions with regard to how people ask for help or how they articulate difficulties they may have with coping. If the behaviour associated with a good mother or father is synonymous with care and nurturing, how can a parent legitimately discuss feelings of anger or frustration towards their baby whilst avoiding the inherent fear of being seen as 'deviant'? In common with Crowe's (2005) findings from her study of the interaction between the general public and mental health clinicians, the discourse at NHS Direct influences how callers to the service:

> "… understand their experiences, feelings, thoughts and behaviours and what they need as treatment" (p 61).

When the problem of an excessively crying baby is constructed in other discourses as a biomedical problem, then parents expect biomedical treatment for example, for colic or teething. This study certainly reveals lack of clarity on the part of the some callers in expressing difficulties with coping, preferring instead to revert to a potential biomedical problem. When a biomedical problem has been eliminated by working through the algorithm and a non-medical question is prompted, the nurses face a situation where they are prompted to give information for example, about coping ability, for which the caller is not seeking advice. To reiterate the point made above, without this shared alignment and agreement of the problem, giving of advice can become problematic.

However, Silverman (1997) explores how callers may make a choice about what they hear and refers to the situation where, during an information sequence, a recipient can "choose whether to hear the information as personally relevant…" (pp 173). No mention is made however, of the callers' perception of the relevance of the questions during the interrogative sequence. Crucially, this study found that nurses rarely choose to directly ask the 'coping question' which appears as part of the interrogative sequence. Therefore, the question is raised as to whether the nurses are limiting the caller's opportunity to choose if this question is personally relevant to them or not.

This study reveals a paradox contained within the discussion about advice giving where nurses remarked there was some advice they would not give from the 'crying baby' algorithm. Offers of alternative advice were put forward, some of which included that contained within the algorithm but clearly not recognised as such. This study supports the findings of O'Cathain et al (2004a) who show how nurses at NHS Direct utilise both forms of information from the algorithm and knowledge from their professional training and experience to inform their decision-making highlighting how nurses eventually

> " … internalise the software script as their own knowledge, and navigate the software to produce recommendations that they feel are most appropriate". (pp 280)

This supports White and Stancombe (2003) who purport that decision-making is subject to other influences that algorithms cannot help. They go onto refer to Benner and her colleagues (1996) who define nurses as having reached the level of 'expert' practitioner when they act on their own initiative without having to consult rules and guidance, but incorporating them in a way that is not self-conscious. This study supports this as the process of 'internalising the software script' is apparent among nurses in the focus group who declare their extensive

length of service with NHS Direct as part of the discussion, and also unwittingly reveal advice they thought of as their own, is sourced directly from the algorithm. Perhaps then, this internalisation and amalgamation of nursing knowledge with the software information should be regarded as a level of NHS Direct nursing expertise.

The data indicate the same dichotomy described by Ruston (2006) that the algorithm was seen as both valuable, in this context relating to ensuring safety, and problematic, in terms of interfering with the caller interaction by sometimes causing alarm and frustration. Swedish telephone triage nurses' feeling that the software programs were inadequate was also found by Holmstrom (2007) who goes on the highlight how, therefore, "… they were forced to some extent, to be creative in their use" (p 27). This echoes Greatbach et al (2005) who, as discussed in Chapter Two, describe how nurses manipulate the algorithms and suggest the reason is conflict between nursing expertise and rule based computer systems. The implication from these authors is that nurses' reasoning does and should prevail triumphantly over that of the machine.

Exploration of the nature of interaction that takes place between nurse and caller at NHS Direct and the nature of 'institutional talk' is important in order to establish and ensure a level of effectiveness since:

> "… clients' perceptions of advice is affected by the conversational environment in which the advice is actually delivered".
>
> (Silverman 1997: 112)

Holmstrom (2007) supports this and emphasises how good communication is essential in telephone triage/consultation in order to give the caller the "feeling of being heard and understood and thus motivated to follow the nurses advice" (pg 23). The point at which professionals offer advice within a conversational sequence is significant. For example, the attempt made by the advice giver to

elicit the client's perspectives before giving the advice is strongly correlated with the client's marked acknowledgement of the advice given (Silverman 1997). How advice is given and received, how a rapport with the caller is created and sustained and how conversation strategies are employed to achieve good communication is important, particularly for parents of persistently crying babies where, as Long and Johnson (2001) found, the parents' stated needs specifically include being listened to, understood, believed and reassured. Stacey et al (2005) reiterate this:

> "… for patients facing values-sensitive health decisions, information provision alone is insufficient to ensure quality decisions" (p 185)

The data from this study suggest that the notion of giving advice, offering reassurance, being empathic, listening, picking up cues, establishing a mental picture and being prepared to intervene or 'sort it' are all regarded as important skills for the NHS Direct nurses in giving advice to parents of persistently crying babies. However, the algorithm again, does not appear to be regarded as a guide in promoting this practice. The process of having knowledge and knowing demands a 'knower', and someone to make sense of and interpret the information (Brown and Duguid 2000) which supports the nurses strongly emphasised affirmations that clinical knowledge and judgement are essential to the role of the NHS direct nurse and it is not purely a task orientated job of ticking boxes.

Central to the discussion of knowledge and information is the consideration of how reality and social relations between nurses and their clients, are constructed (Crowe 2005). The algorithm presents both medical and non-medical subject positions as a construct of reality. However, it is the medical element which seemingly becomes internalized by the nurses over time within the culture of NHS Direct, and merged with previous experience of another nursing culture. The non-medical element which is typified by the 'coping question' is, apparently,

not afforded the same privilege or cultural value and the construct of reality posed by the algorithm text is often rejected by the nurses, even though the responses to it will yield a referral to the primary care team in the same day. Thus, what Crowe (2005) describes as a "particular version of reality that represents the interests of one particular group" is constructed, although the interest for nurses in not addressing the coping ability of the parent is hard to establish as is discussed below, and requires further explanation.

This study has identified nurses' use of alternative strategies to asking the 'coping question' including not asking, asking around, and picking up cues. Using Crowe's analysis therefore, it could be argued that the nurses construct a subject position that they need not directly ask certain questions and make assumptions about the normal subjectivity of the caller, that they would be offended. This subject position could, therefore, determine the nurse's use of the algorithm when it ceases to be medically driven and is at the 'relaxed' stage of considering behaviours and experiences; the point at which, according to Holmstrom (2007), telephone triage nurses' task "… will be focused more on information, support and teaching" (pg 23) at a time when:

> "…the demands on nurses' knowledge increase and callers' needs may be met through negotiation" (Wahlberg et al 2003 p.38)

Managing Risk and Ensuring Safety

White and Stancombe (2003) discuss the means by which differential diagnosis are arrived at in medicine drawing parallels with hypothetico - deductive reasoning that is disproving competing hypotheses about the symptoms until what is left is most likely to be accurate or 'best fit'. This systematic information gathering is utilised by expert nurses; the level of expertise defining the level of success (Tanner et al 1987). Within this are what Edwards (1994) describes as medical, contextual, emotional and ethical factors which influence the telephone

nurse triage process. The hypothetico-deductive model has many similarities with the manner in which CAS operates at NHS Direct. As mentioned earlier, the procurement process resulting in the choice of CAS drew attention to the safety of the system. Hanlon et al (2005) acknowledge this and quote from the nurses' software training manual (date not given):

> "CLINICAL ASSESSMENT SYSTEMS (CAS) ensures a uniform approach to processing a call. This approach minimises malpractice risk as well as improving call centre performance" (p 1-2)

The difference in language here is important as ensuring 'safety' has a different connotation to 'minimising malpractice risk'. Hanlon et al (2005) go onto to describe that CAS was favoured over a picture-building model of health founded on an interpretative, patient focused context. One might argue that this model is more akin to a traditional patient-centred, holistic nursing culture whilst the CAS model is more closely aligned to a traditional medical model. If one accepts this, then some of the difficulties that arise from using CAS, its algorithms and protocols, for nurses are, perhaps, understandable. However, as described above, it is the biomedical discourse that nurses at NHS Direct choose to privilege over what might be described as the more holistic care and patient centred discourse more traditionally associated with nursing. Hanlon et al (2005:150) suggest that this is an attempt to gain a scientific 'veneer' in the "mistaken belief that it will increase their status rather than open them to deskilling" One of the problems of the more interpretative model lay in the longer call times that resulted (Hanlon et al 2005) hence the confident statement above highlighting how CAS improves call centre performance. However, this, and other studies show that experienced nurses can manipulate the system, using their own clinical knowledge and expertise, resulting in a more interpretive and holistic model than was perhaps intended in the design of CAS. In this sense, perhaps the fears raised by Aas (2004) are assuaged:

> "Categorizing human identity into axis grids and risk instruments is an act of deconstruction of subjectivity. It is an act of taking unique, whole individuals apart, and then putting them together according to the requirements of the system … This process requires minimal narration, communication or interpretation of social life" (pg 386).

This study has found that subjective and tacit knowledge does impact on the use of the 'system'. In addition, the algorithm itself is dynamic and is informed by practical experience by the practitioners who use it through the 'request for change' process.

Role in Using the Crying Baby Algorithm

This study has found that there is a strong sense of traditional nursing responsibility and accountability and the need to justify what decisions have been made among the nurses at NHS Direct. However, there was also the acknowledgement that adhering to the algorithm will yield safety.

In addition, this study has also found that the 'crying baby' algorithm is described as being 'cautious' by the nurses. Strictly adhering to the algorithm is perceived as safe for most of the interrogative sequence and final disposition with downgrading negatively regarded as potentially unsafe. However, this alliance with the algorithm is not prevalent when it comes to asking the 'coping question' or giving advice, when reliance on picking up cues and not causing offence etc… are regarded as acceptable explanations for departing from the algorithm. The foundation for this clinical judgement is not apparent, but the perception that when emergencies have been excluded, interaction with the caller becomes more relaxed, suggests anxieties relating to departure from the algorithm are no longer present and rephrasing, asking around, or not asking is no longer perceived negatively as potentially unsafe. In relation to the 'coping question', the stated necessity to explain to parents why questions need to be asked because nurses can't see the child, falls from prominence and reliance on

'picking up cues' is stated as the preferred method of assessment. Greatbach et al (2005) highlight how NHS Direct nurses:

> "… reorder, conflate, decline to ask and supplement CAS's algorithmic questions" (pg 826)

Ruston (2006) goes further and also identifies the manipulation of the algorithm, as a means by which the nurses' minimise uncertainty and maximise safety.

Use of information and knowledge

The increasing bureaucratization of healthcare practices which seek to reduce complex and multifaceted issues to a single answer is seen by Hanlon et al (2005) as an "organisational desire to standardize and achieve consistency" (p150). They go on to highlight a key method of achieving this standardization is through technology; the fundamental element of NHS Direct. The expertise of the system is deemed by the authors, to be trusted above that of the expertise of the nurses who use it. This is clearly not recognised by the nurses in this study, who clearly articulate how the system is a guide.

The discourse at NHS Direct is founded upon and scripted from biomedical literature and seeks to confirm or disaffirm illness hinging on a medical model of differential diagnosis or case reductionism. Hanlon et al (2005) present the argument that:

> "…one can see NHS Direct as a site of conflict and domination where the seemingly instrumental and objective medical knowledge of the technology is prioritized over subjective nursing knowledge" (pg 156)

The discourse locates signs and symptoms as medical issues and, arguably, has the potential, in common with Crowe's (2005) findings, to advance "biomedical

discourse to the exclusion of others". The connection with evidence base practice here is apparent.

However, this study has shown that the algorithm, as it is written, encourages and prompts the nurses to delve into that area where a complicated, value-laden judgement may have to be made with the inclusion of the 'coping question' and recommendations for soothing a crying baby. The same argument about a predominant biomedical focus cannot be applied to the 'coping question' since ascertaining parental coping ability and strategies, is not easily made subject to randomised controlled trials and does not rate highly in terms of evidence based practice. Indeed, the success of measuring interventions designed to impact on parental coping capacity and education is frequently brought into question (Moran et al 2004). However, given that RCTs are employed in seeking largely quantitative and mathematical solutions to problems, perhaps the use of other methods might serve to improve the lack of reliable evidence rather than the call for more RCTs to measure success of parenting interventions as Moran et al recommend.

As discussed above, the algorithm includes both medical and non-medical subject positions and therefore, of itself, does not construct a particular reality which does not value exploration of the context held within the 'coping question'. The findings from this study indicate that it would be wrong to claim that it is the algorithm itself and it's basis on RCT populated evidence based studies, that is responsible for the lack of exploration of parental copy capacity by nurses using the crying baby algorithm at NHS Direct. This is especially so since the evidence from this and other studies highlights how nurses use their own nursing knowledge and professional expertise and combine this with the use of the algorithm over time. An explanation for the privileging of the medical subject position contained within the algorithm can be found within the discussions of nursing dating back to the 1980s, which highlight how the nursing profession has attempted to gain prestige equal to that of medicine, but in doing so has buried

the caring skills unique to the nursing profession in favour of a medical focused scientific approach (Kelly and Symonds 2003).

In addition Ruston (2006) found that nurses at NHS Direct who found the advice recommended in the disposition did not respond to their own tacit knowledge, regarded the software as a source of risk which was then minimized by the application of their own professional judgement. Ruston describes how nurses felt that in some circumstances, delivering advice specified by the software would result in less than optimal care for the caller. It is difficult to envisage how a nurse would regard giving advice about how to sooth a crying baby as being risky, or what they might offer to better this advice. Ruston does not identify in her study whether or not the dispositions where this occurred were of a high or low level and it would be of interest to explore this further.

One might reasonably expect, that, even if the 'coping question' were absent, nurses would utilise their skills of holistic assessment and assessment of social context, evidence of which is apparent elsewhere, to explore parents coping ability. However, this study has found that this is, apparently, rarely the case and the prompt given by the algorithm is rarely successful in encouraging such an exploration. It might be that it is the nature and framework of the assessment that makes nurses feel uncomfortable with asking such questions. However, as one nurse put it, it would be something she wouldn't ask in a ward setting either.

This study raises questions, not only about the dichotomy between computer based interaction and human based interaction but also about the differences between the medical model of symptom-centred differential diagnoses and case reductionism and the patient-centred, holistic care culture of nursing. In addition, it raises questions about why nurses choose to step away from asking difficult, qualitative questions within this highly structured, clinical questioning environment.

Dealing with uncertainty and child protection practice

The answer 'yes' to the 'coping question' may indicate that a child is at risk or likely to be at risk of significant harm. Nurses at NHS Direct, on entering 'yes' to the question, would be directed to consult child protection procedures. However, further exploration following the answer 'yes' might also indicate a lower level of risk perhaps indicating interventions that would fall more into the definition under Section 17 of the Children Act 1989 as a 'child in need'. Defining the level of need requires further assessment and discussion with the parent and discourses concerned with levels of intervention and prevention may assist this assessment. However, the algorithm does not provide nurses with a choice and defines a 'yes' reply to the coping question as 'child protection'. Defining a case as 'child protection' for health professionals brings with it a complex array of uncertainties and anxieties. Although their study focused on primary care health professionals in Northern Ireland, the findings of Lazenbatt and Freeman (2006) may offer some unexplored suggestions for nurses reluctance to ask the 'coping question'. Whilst acknowledging that recognition of child physical abuse is a complex and difficult task, the authors go on to highlight how their findings:

> "… illustrate a substantial gap between their ability to recognise maltreatment and knowledge of the pathways for reporting it" (p.232).

Uncertainty of process and anxiety and fear of 'being wrong' are also cited as being key factors. These are underlined by:

> … a hesitation about asking clients sensitive questions" (p.233)

Findings from this NHS Direct study, do suggest that there is reluctance for nurses to ask questions that they do not wholly understand, such as hair being wrapped round a baby's fingers or a baby boy's penis, once they have excluded emergencies. Edwards (1994) describes an emotional and ethical cost experienced by telephone triage nurses in adopting risk reducing actions which

may be contrary to their own clinical judgement. Fear of being wrong is certainly openly discussed in this study, but not in relation to misidentification of child protection issues.

Managing uncertainty and striving for certainty in decision making is not a new aim for health professionals and those working in partner agencies within the field of child welfare. In child protection work in particular, striving for certainty and in doing so, avoiding certain losses, can prove dangerous and lead practitioners to adopting a 'riskier' course of action (Kelly and Milner 1996). As Munro (2007) emphasises:

> "Being able to tolerate a degree of uncertainty is a core requirement in good practice, to maintain what Lord Laming called 'respectful uncertainty' and 'healthy scepticism' (Laming, 2003)". (p45)

Given the overwhelming focus on safety within the NHS Direct organisation and the discourse of the nurses themselves, perhaps toleration of a level of uncertainty that revolves about parents ability to cope with their child, is not acceptable since, perhaps, the greater the level of uncertainty, the higher the risk of getting it wrong. Edwards (1994) suggests telephone triage nurses' reluctance to take risks as arising:

> "… from the fear of the consequences of risk-taking in a situation of uncertainty and limited control…" (p722)

He goes on to describe how the nurses' own 'self-belief' featured strongly in decision making; a point later echoed by Stacey et al (2005) who identify telephone triage nurses' confidence and organisational pressure as influencing nurses ability to provide support in value-sensitive cases.

This study raises questions about whether asking the 'coping question' may be perceived as opening a floodgate of uncertainty that the nurse at NHS Direct is not equipped to deal with and the solutions to which are not immediately apparent on the screen and which therefore, is better left closed. Alternatively, rather than maintaining an open mind which accommodates both support and suspicion at the same time (Cooper, Hetherington and Katz 2003), the question is also raised as to whether the NHS Direct practitioner, in the absence of physical presence, is more likely to close their mind to a picture of the family which challenges the one they have already established earlier in the interrogative sequence of the call, a possibility which exists for all practitioners dealing with complex family environments.

As Munro (2007) reiterates however, the current policy context of early intervention and support that is central to the philosophy of Every Child Matters: Change for Children Programme (DfES 2004), places a duty on all professionals to be aware of the possibilities of abuse or neglect and the stressors that can lead to it. This is not to suggest that NHS Direct fail in their duty to deal with child protection cases as this has not been considered, or incidentally indicated, in this study. However, it does prompt questions about accountability and responsibility of nurses in relation to the broader safeguarding agenda which goes much further than identifying abusive situations. Within an holistic assessment of a child and family, does not a nurse have responsibility, in terms of safeguarding and promoting the welfare of the child, to explore a parent's ability to cope with their child especially when presented with behaviours that are known to impact negatively on coping ability?

Parenting Education and Advice

It could be argued that it is not the business of NHS Direct to give support and education to parents about coping with a crying baby if its business is purely triage. A key role for NHS Direct could be to direct parents to an agency that can provide a professional intervention in giving practical advice and support to

parents such as Parentline Plus. As highlighted in Chapter Two the need to signpost parents to appropriate sources of help and support is part of the national government agenda incorporating early intervention and support. Health visitors are not the only professionals who can provide such support and are still largely restricted to office hours in many areas. The inclusion of directing callers to other helplines within the NHS Direct final disposition and associated care menu, is therefore, very much worthy of consideration.

One could argue that providing support and education to parents is very much the role of NHS Direct as a provider of healthcare advice. As highlighted in Chapter Two, parents who request help with parenting difficulties should be provided with help when requested, but inappropriate intervention can discourage parents seeking further advice (Iwaniec 2006, Dakof and Taylor 1990). Dakof and Taylor's (1990) description of the dangers of inappropriate intervention in this regard, probably sums up the dilemma faced by NHS Direct nurses. On the one hand, a request for help should not be denied that highlights the need for the nurse to indeed provide the algorithm associated advice as it pertains to crying baby or a better alternative. In addition if the nurse were to direct the caller to a service such as Parentline Plus, a voluntary service which has not the capacity to answer all calls, and the caller still does not receive the help they require, then this will surely add to their stress. On the other hand, a parent who hears advice giving as a criticism of how they are handling a situation is also undesirable, and, as highlighted above, is a possibility when their request has not been about parenting but about a biomedical complaint to which the NHS Direct nurse has responded by giving parenting advice. As Boddy et al (2004) highlight, although Parentline Plus was not established as a crisis helpline but for 'ordinary' parents, callers to the helpline have a high level of need and are less likely to contact traditional family support services. Therefore, those callers who reach NHS Direct with 'small problems' relating to a child's behaviour or development, like excessive crying, may reasonably expect their needs to be met via the same body of universal services that are otherwise available to them at

other times such as GP service and health visiting service and the choice made available as to whether they hear advice about coping, or not.

Findings from studies discussed in Chapter Two suggest that provision of support and advice is very much the business of telephone triage services. Wahlberg et al (2003) in their consideration of Swedish telephone triage services concluded that training should pay attention to active listening. This is supported by Holmstrom (2007) who highlights how, following the elimination of emergencies, the telephone triage nurse's task is focused more on providing information and support. Indeed, the National Audit Office (2002) emphasises the importance of providing callers to NHS Direct with emotional and practical support and the importance of NHS Direct nurses' listening and communication skills.

As discussed at Chapter Two, Miller and Sambell (2003) highlight how differences in style of support and learning are not features of parents as individuals but of the nature of their relationship and interaction with their child. As such, the same parent may require the three different types of support and education identified by Miller and Sambell, at different times. When one considers the three types of support, one can draw parallels with the differing use of the algorithm as a means of offering support.

- The dispensing model: the educator tells parents 'what to do' - congruent with 'direct use of algorithm'.
- The relating model: given time and sympathy, parents feel listened to, educator focuses on needs of parents and focuses on positive, not just negative experiences - congruent with 'adding to the algorithm'.
- The reflecting model: educators viewed as people who have prompted parents to think about their own responses, developing understanding, do not prescribe thought – not easily achievable but has some congruence with 'covert use of algorithm'.

When one considers the key aspects of parental need highlighted by Long and Johnson's (2001) study as:

- The need for people to listen and to try to understand.
- The need to be believed.
- The need for someone to visit and to 'be there'.
- The need for reassurance that the parents are not to blame and the crying will stop eventually"

it seems that, in addition to the other factors associated with the second category of use of algorithm identified in this study, adding to the algorithm provides a more fitting environment for giving effective parenting education although direct use of the algorithm also serves a purpose in this regard for those parents who want to know what to do. Of course there is no possibility of 'being there' or 'visiting' but a sufficient boost to parenting ability may result by the efficient and opportunistic parental education via NHS Direct until such a time as someone from the other universal health service provision services, can visit.

Chapter Conclusion

This chapter has highlighted the research findings that relate to the findings from this study in terms of the different ways in which nurses at NHS Direct use the crying baby algorithm and how they use it selectively. It has emphasised how nurses regard the algorithm as a guide and a support to supplement their clinical knowledge, not as a replacement for it. Knowledge and experience of working at NHS Direct adds another dimension whereby nurses are able to manipulate the algorithm. Nurses themselves regard adding to the algorithm as best practice in using the technology.

The caller's biomedical construction of their expectation and problem and the limitations this puts on the nurse to ask questions outside of this construction are

considered. However, this is analysed critically alongside the limitation of choice for the caller to hear advice that is not asked for, which is the consequence of the nurses' avoidance of asking the 'coping question'.

The chapter considers recent research which supports the findings of this study in relation to how nurses internalise the algorithmic script. The suggestion is made that this ability may be constructed as the nurses having reached an expert level of competency in NHS Direct work despite the acknowledged dissonance between nursing reasoning and the rule based system used at NHS Direct. The inherent safety that is part of the latter is also acknowledged as is the importance of nursing clinical experience and knowledge. The chapter highlights how the biomedical discourse that frames so much of the interrogative/interview sequence is internalised by nurses but how this is not the case with the non-medical aspects, as typified by the 'coping question'. Nurses construct a subject position that they need not directly ask certain questions and in doing so make assumptions about the normal subjectivity of the caller, thus, determining the nurses' use of the crying baby algorithm at the 'relaxed', non-medical stage of the call. However, this is analysed critically in terms of research findings which support this study and which emphasise that this 'relaxed' stage represents a higher demand on nurses' knowledge as the algorithm 'doesn't tell you anything' and requires more listening and negotiation with the caller to determine their needs and prepare the environment for support and education. Although this study has found that nurses regard departing from the crying baby algorithm as potentially unsafe, this is not the case when medical emergencies have been excluded indicating that there is little/no risk attached to *no*t asking the 'coping question'.

The complex issue of dealing with uncertainty is addressed in this chapter in relation to the findings from the study and related research. It emphasises how a 'yes' to the 'coping questions' would define the call as requiring child protection consultation This brings with it a whole new area of uncertainty which the script

on the screen at NHS Direct, at the time of the study, does not diminish. No words to offer the caller are suggested as can be seen in Chapter Two. Findings from this study show that, in the non-medical relaxed stage of the call, nurses are reluctant to ask questions they do not fully understand, although this is not acknowledged by the nurses themselves. Fear of missing a child protection issue by not asking the 'coping question' is not considered, in contrast to the fear of missing an element of the medical stage of the call. The chapter raises the question about nurses' responsibility to explore parental coping ability when presented with a situation known to impact on it negatively. A critical emphasis is placed on the fact that the business of NHS Direct is both signposting to services by classifying and sorting priorities through triage and also the provision of information and support through healthcare advice. The decision to hear advice not overtly asked for should be in the gift of the caller and not a decision made for the caller by the nurse.

The chapter stresses that the findings from this study indicate that it would be wrong to claim that the lack of exploration of parental coping capacity by nurses is solely influenced by the crying baby algorithm itself. Indeed, the suggestion made by recent authors that nursing knowledge should always be privileged above that of the 'machine' is, to some degree, challenged, since it is the machine that prompts an exploration into parental coping ability, and nursing knowledge that refutes it. This points to a wider discussion about the construction of nursing and the privilege which the profession itself now affords the biomedical subject position, which may provide an explanation as to why nurses feel uncomfortable asking difficult, value sensitive questions. One wonders if the same difficulty would have been encountered had NHS Direct been in existence fifty years ago.

CHAPTER SEVEN: Conclusion

This chapter reiterates the aim of this research and the questions it has sought to answer within the context of the research findings and how this informs the body of knowledge relating to nursing practice in terms of making decisions and giving advice about ambiguous, value sensitive, non-medical topics such as parental coping with crying baby, within the structured algorithmic framework of NHS Direct. The chapter emphasises that, although the crying baby algorithm was the area of focus for this study, it can be considered an exemplar, and the findings extrapolated to congruent areas of practice, such as, for example, mental health issues. The chapter also raises areas in need of further exploration and highlights the limitations restricting this study. Finally, the chapter outlines implications the study findings have on nurse practice, and provides recommendations for future consideration.

In Long and Johnson's (2001) study, the parents eventually accepted that coping involved support *through* the problem rather than *solving* the problem (that is stopping the baby crying) which was frequently an impossible task. The need for a careful approach towards a responsive professional intervention that is rooted in evidence is, therefore, crucial. However, Silverman (1997) makes the valid point that there is no right or wrong way to interact with clients (pg 868).

Stacey et al (2005) suggest that 'value-sensitive' decisions can be problematic. These authors studied the barriers and facilitators which influenced telephone triage nurses at a Canadian call centre, providing twenty-four hour telephone consultation by registered nurses who use patient decision aids and in-person nurse coaching. The results of that study identify several barriers including the lack of a structured process to guide nurses during these type value-sensitive calls, nurses' lack of adequate knowledge, skills and confidence in dealing with the calls and the organisational pressure to minimise the length of the call all of which have relevance to the findings from this study.

Within this thesis I have attempted to highlight means by which nurses at NHS Direct make decisions and give advice to parents with persistently crying babies and how this, and their interaction with callers, is affected by experience, knowledge and the nature of the organisation. The findings from this study, although focused on the crying baby algorithm, can be extrapolated to similar value-sensitive issues which are presented to nurses and which require decisions that are less than certain, to be made for example, mental health issues. I have discussed the findings in the context of the current debates and developments about the use of algorithms in response to socially interactive phenomenon and the practice of effective telephone advice giving. The research questions I intended to address are as follows:

- How do nurses at NHS Direct use their clinical judgement and practice to manipulate and make different use of the evidence embedded within the crying baby algorithm.
- How does this impact on nurse/caller interaction?
- How is telephone advice given to parents ringing for advice regarding persistently crying babies
- How is the 'coping question' embedded within the algorithm, used to assess parental coping ability
- What do nurses perceive to be their role in using the crying baby algorithm?

- ***How do nurses at NHS Direct use their clinical judgement and practice to manipulate and use the evidence embedded within the algorithms?***
- ***How does this impact on nurse/caller interaction?***

Nurses use the 'crying baby' algorithm at NHS Direct in three distinct ways and this depends on experience, background and length of service. Findings from this study demonstrate how the ways in which the algorithm is used have an impact on nurse/caller interaction. The direct use of the algorithm can frustrate

the caller. Adding to the algorithm provides a more fitting environment for giving effective parenting education and advice although direct use of the algorithm also serves a purpose in this regard for those parents who want to know what to do. New practitioners are more likely to use the algorithm directly until they become used to the system and become confident enough to re-engage with their own professional judgement and tacit knowledge.

Nurses reach a level of confidence as an NHS Direct practitioner whereby they 'internalise' or combine their previously learned nursing knowledge and experience with that of the algorithm, in this case the 'crying baby' algorithm. Once this level of confidence has been reached, the nurse can manipulate the algorithm in such a way as to satisfy their own clinical judgement, opinion and tacit knowledge, thereby using the algorithm as a guide and a support. The manipulation is more apparent where the algorithm features non-medical elements, to the point where, if the algorithm prompts a question such as the coping question, the nurse can choose not to ask at all, privileging their own knowledge over that of the algorithm which is not generally the case in other elements of the crying baby algorithm. The disposition that any of the caller's possible responses to the 'coping question' will yield, involves referral to the primary care team that same day. In avoiding the question and therefore, the direct response, an opportunity for involving primary care services is lost.

The findings from this study suggest that if an element of the crying baby algorithm lies outside of the nurses' experience in relation to medical issues, then the nurse will privilege the information contained within the algorithm as a means of ensuring safety. If, however, a non-medical element appears that is outside of the nurses' experience, the nurse feels comfortable enough to avoid privileging the information in the algorithm and rely on techniques such as 'picking up cues' to answer the question proffered on the screen. The issue of 'safety' loses prominence in the latter case.

Whilst there is evidence to suggest that the nature of the NHS Direct System CAS includes an inherent process of case reductionism to minimise uncertainty, there is no evidence to suggest that this inhibits nurses from asking the 'coping question'. The decisions to avoid asking, or rephrasing the 'coping question ' are derived from the nurses' own ability, confidence and knowledge and are not inherent within the algorithm.

- ***How is telephone advice given to parents ringing for advice regarding persistently crying babies***
- ***How is the 'coping question' embedded within the algorithm, used to assess parental coping ability***
- ***What do nurses perceive to be their role in using the crying baby algorithm?***

Nurses at NHS Direct perceive their role as being safe, giving advice, offering reassurance, showing empathy, listening, picking up cues and being prepared to intervene. These skills are perceived to be drawn from their clinical expertise as nurses rather than learned skills from NHS Direct or from the crying baby algorithm.

There is a reluctance to ask the 'coping question' directly and a reluctance to give aspects of coping advice. This is in common with other aspects of the 'crying baby' algorithm which are not necessarily understood by some nurses and which result in a low-level disposition of a non-medical nature.

The reason for this reluctance is not inherent within the 'crying baby' algorithm and cannot be explained by a conflict in nursing and medical culture. Neither can it be explained in terms of difficulties between human interactions with static computer systems. In the 'coping question', the algorithm does prompt the nurses to explore qualitative issues and make qualitative judgements. Given the

focus on safety and the culture of assuring certainty, a more likely explanation lies with the wealth of uncertainty that a 'yes' response to the question would engender, an uncertainty that is inherent in child protection practice. However, further questioning may well yield a lower threshold of need than significant harm but this is not available within the current algorithmic framework and is apparently not something the nurses draw from their tacit knowledge. The need for further exploration of this area is indicated. With the lack of any long term relationship with the caller and in the absence of any physical presence coupled with the fact that medical emergencies have already been excluded and a low level, non-medical disposition is the likely outcome, it is easy to avoid the 'coping question'. Once avoided, and with little opportunity for the caller to express their level of coping capacity, offering advice that may enhance coping presents an understandable dilemma which is difficult to overcome. The evidence from this study, however, does indicate that it can be done sensitively and effectively.

There is no sense that exploring parental coping capacity in relation to crying baby is regarded as important by the nurses at NHS Direct. The need to adhere to the medical elements of the crying baby algorithm in order to ensure safety, is not apparent with regard to the non-medical element typified by the 'coping question'. The health promotion advice associated with crying baby is regarded as unsafe which suggests a need for increased knowledge and skills training in relation to early intervention and support for families.

At the time the data were collected, there was nothing in the algorithm that prompted the nurse to reassure the caller that the crying will stop. Advice about coping with the crying, such as that given in various health promotion programmes, was regarded by the nurses as 'dangerous'. The advice sequence of the crying baby algorithm focused on the behavioural problem of the child rather than emphasising the normality of the behaviour and highlighting strategies to cope with the behaviour that parents may find effective. However,

the findings from this study suggest that, even if this were part of the advice giving sequence of the algorithm, nurses would be hesitant to give it.

Findings from this study suggest a need to draw explicit attention to the issues raised in relation to difficulties in coping with crying and in handling the difficult questions that explore parental coping capacity in an attempt to overcome barriers created by professional perceptions, anxieties and lack of knowledge. The consideration of these issues is recognised within the context of the tensions between the function of the NHS Direct organisation variously described as both triage and helpline, and the degree to which the nurses orientate themselves to either one or other function, or recognise the need for both. This then raises questions about the degree to which nursing skill is required to undertake the essentially different tasks embedded within the NHS Direct algorithm.

Limitations

The size of this study is clearly a limitation, particularly in terms of the numbers of calls analysed and findings from it must be seen within this context. The gap in time from call data collection (2002) and Focus Group data collection (2006) does not present a threat to validity and reliability as the change in CAS version does not represent a major change to the 'crying baby' algorithm and the Focus Group data supports that found in the call data. However, it would further strengthen validity to sample more calls from 2006 to see if the predominant use of the algorithm identified in this study from 2002 (that is direct use) remains so in 2006. The change in LREC requirements for NHS research would have necessitated applying for more approval which would result in an unacceptable and unprofitable delay in completion. The process of winding backwards and forwards through tapes to find the call in 2002 was extremely time consuming. Since all calls are now recorded digitally, this process would now be completed far more quickly.

A limitation of the sample size is the restricted gender representation. As shown in the Literature Review at Chapter Two, men are more likely succumb to violence in the form of shaking their baby when crying is the trigger. From the sample of calls, only three of the eleven included male callers. A larger sample may have provided a greater opportunity to explore gender issues in relation to the research aims.

A missing factor from this research is the voice of the parents themselves. This is also a missing feature from other research on the subject. Client satisfaction surveys are a standard part of NHS Direct quality monitoring practice and, with further relevant LREC approval, it might have been possible to identify some relevant information, through the client satisfaction data. However, the same reasons as stated above applied. If the study were to be repeated consideration might be given to a direct and robust approach in eliciting how parents felt they were supported with the problem they raised in relation to crying baby, what, if anything, influenced how they framed the problem at the beginning of the call and how they might respond to a recommendation that they ring someone else – like another helpline. In particular, it would be most valuable to explore whether parents really are offended at being asked the 'coping question'.

Recommendations

Whilst avoiding the medicalisation of parental difficulties in coping with persistently crying babies, consideration might be given to enhancing nurses' knowledge, confidence and experience in order that interventions to promote parenting strategies to cope with a persistently crying baby are valued, especially in terms of providing support as part of the 'helpline' function of NHS Direct.

Dilemmas relating to giving advice which is not overtly requested is worthy of full exploration within the context of NHS Direct business, including both triage and helpline functions. Appropriate training which recognises these dilemmas and empowers nurses to find solutions given would be a valuable addition to the NHS

Direct training schedule. This might include consideration of a sample algorithm 'script' that includes a form of words nurses might use in response to a 'yes' to the 'coping question'. Training might also include explicit reference to the issue of different uses of the algorithm by NHS Direct nurses, so that, rather than progressing from one style to another by default, they are able to choose the style appropriate to the nature of the call.

As part of the triage function of NHS direct, it would be appropriate to consider the inclusion of directing callers to other helplines within the NHS Direct final disposition and associated care menu. However, this must be viewed within the context that many such helplines, which are usually charities relying on volunteers, only manage to answer less than half the calls.

Further studies which examine the viewpoint of parents using NHS Direct might be usefully explored in order to de-mystify the notion that asking questions like the 'coping question' will cause offence. The findings from such studies can be usefully extrapolated to other nursing disciplines.

Whilst recognising that not all nurses can draw on their own professional knowledge and experience to give advice by which to reassure parents of the normality of excessive crying in infancy (once emergencies have been excluded) and to recommend effective coping strategies, consideration should be given to including such information in the advice sequence of the algorithm. However, given the finding that nurses may choose not to give such advice, any addition of this nature must be accompanied with training and education.

The level of knowledge that determines the decision to ask, or not ask the 'coping question' and similar questions that may lead to uncertainty, and thereby reducing the opportunity for parents to express the difficulties they may have with an excessively crying baby, is the same for NHS Direct nurses as for other nurses in other disciplines and highlights the need emphasised by Crowe (2005)

> "Nursing practice is a political, cultural and social practice and needs to be understood as such to improve the quality of care provided…Nurses should … be encouraged to develop a broad range of knowledge from other disciplines to enhance their nursing practice". (p62)

As mentioned in the previous chapter, some authors imply that nurses' knowledge should be privileged over that of the computer algorithmic system which has been reflected in recommendations such as that of Holmstrom (2007):

> "Continuous updating and adaptation of software programs to the local practices and education of nurses seem to be needed" (p28)

I would add that the findings from this study indicate a need for nurses' knowledge and education to be continuously updated in line with non-medical, non-emergency additions to the algorithm and for an explicit recognition that the role of NHS Direct is both to perform traditional triage function of sorting, choosing and classifying or to prioritize hazards, and also to provide practical and emotional support and reassurance. It could be argued that, rather being the stage at which a nurse can relax, the non-emergency part of a call, as Holmstrom (2007) highlights, is the real test of nursing knowledge and skills. Future work may further consider the different types of skills required for different elements of the calls at NHS Direct in order to address the question whether or not this is a job for nurses. A programme of training that recognises the importance and necessity of enhanced skills in negotiating callers' needs in order to offer more effective parental support and education may go some way to meeting this need. Perhaps then nurses would be in a better position to respond to the nineteen year old father who shared with me:

> " Screaming, I hate screaming, I cannot stand screaming – I don't know why I just can't stand it… [nurses and midwives] were nice enough people and

seemed to know the practical side of their job, but not the other side, you know asking probing questions that make you talk, so I could say “there is something wrong yes!”

Final Thoughts

The findings from this study highlight issues of good practice in the area of telephone triage, giving advice and decision making within the dynamic context of NHS policy and nursing practice. It raises important questions about how nurses are adequately prepared to accept accountability and responsibility for the exercise of the complex practice at NHS Direct and in addition, for the exercise of practice in dealing with uncertainty and situations which impact on children and parent’s ability to cope with their normal behaviour. Using ‘crying baby’ as an exemplar of non-medical, non-emergency calls to NHS Direct, this study highlights that, despite the rigidity of the system and the associated protocols, nurses will use algorithms differently and their practice will not be standardized. Recommendations, therefore, reflect the need to focus on the education, knowledge and practice of the nurse rather than the need to develop tighter and more rigid systems. These findings will be useful in informing and influencing the developing sphere of clinical supervision with NHS Direct, as a means of providing support and education through reflection. The findings add to the body of knowledge about the effectiveness and potential for service provision from NHS Direct.

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APPENDICES

Appendix 1: NHS Direct Call analysis sheet

1. When does the coping advice appear and when does it not?

2. Do nurses give advice about coping outside of the medical framework of the algorithm?

3. Do parents overtly express their difficulties with coping and are their other pathways open to the nurse to successfully give coping information?

4. What is the affiliation and uptake – the degree to which the nurse and caller appear to agree with each other?

5. What are the expectations of the caller, are they seeking reassurance, do they want to be told to do something, are their expectations met?

6. Is the structure of the interaction supported by the algorithm or hindered by it?

7. What are the practical issues faced by practitioners?

8. Comment on the use of:
    - Assigning or implying membership categories
    - Narrative and detail
    - Active voicing
    - Extreme case formulations
    - Crossing boundaries between institutional talk and everyday talk.
    - Callers establishing moral adequacy
    - Nurses establishing institutional ID/collective institutional ID
    - Advice formats: institutional/passive voice or personal voice.
    - Is there professional detachment?
    - Empathy
    - Paraphrasing and repetition
    - Acknowledgements
    - Presence or absence of uptake markers.
    - AIS, advice-as-information sequence?

Appendix 2: Participant Information Sheet

NURSE FOCUS GROUP PARTICIPANT INFORMATION SHEET

Title of Study:
Exploring practice in supporting parents coping with persistently crying babies: nurses use of algorithms and nurse/caller interaction at NHS Direct

You are being invited to take part in a RESEARCH study. Before you decide, it is important for you to understand why it is being done and what it will involve. Please take time to read the following information carefully and discuss it with your colleagues if you wish. If there is anything that is not clear or if you would like more information please do not hesitate to ask me, Sue Smith – contact details at the end of this sheet.

WHY HAVE I BEEN CHOSEN?
All nurses who work at NHS Direct and have taken calls, like those that have been sampled by the researcher, are being asked to take part in this study as part of a focus group. The particular areas of interest relate to how the nurse interacts with the caller, how they use the algorithms in this interaction and how they perceive their role with parents who call with crying babies.

WHAT IS THE PURPOSE OF THE STUDY?
This study is aimed at describing and exploring the interactional process between NHS Direct nurse and callers who contact NHS Direct for advice relating to crying babies under 1 year of age, where the final disposition is either home care or health visitor referral. The study aims to explore the degree to which this interaction is influenced by the use of algorithms.

DO I HAVE TO TAKE PART?
It is up to you to decide whether or not to take part. If you do decide to take part, you will be asked to sign the attached consent form. If you decide to take part, you are free to withdraw at any time and without giving a reason.

WHAT WILL HAPPEN TO ME IF I TAKE PART?
If you agree to take part, I will be contacting you and a group of your colleagues by letter giving a time, date and venue where we can meet and hold the focus group. The focus group meeting will last for about an hour and will cover a range of related issues around your work with parents who call NHD Direct for advice about their crying baby. The meeting will be taped and transcribed. The transcription will not contain any of your personal details and you will not be identifiable. When the transcription is completed, the tape will be destroyed.

The information gained from the focus group will be analysed and form part of the complete research study.

WHAT ARE THE POSSIBLE DISADVANTAGES and ADVANTAGES OF TAKING PART?

There are no disadvantages in taking part. The information you give will be processed so that no-one can tell that it has come from you.
There will be no direct advantage to you taking part either. However, if the research is completed successfully it will lead to informing nursing practice in this field.

WHAT WILL HAPPEN TO THE RESULTS OF THIS STUDY?
When the study is finished, the results will be published in professional journals and presentations at conferences about the results may also take place. You will not be identified in any report or publication. It will also be used to form the basis for information and advice provided to parents and the way this information and advice is delivered. Anyone taking part will be offered access to the published results.

You will be able to access a copy of the published results by contacting …..

CONTACT FOR FURTHER INFORMATION:

Sue Smith 07775 673230

Appendix 3: Participant Consent Form

Study Number
Participant identification Number for this study.

CONSENT FORM FOR RESEARCH STUDY

Title of project:
Exploring practice in supporting parents coping with persistently crying babies: nurses use of algorithms and nurse/caller interaction at NHS Direct

Name of Researcher:
Sue Smith

Please tick to confirm

- I have read the information sheet for the above study ☐
- I have had the opportunity to ask questions about the study, and to discuss it with colleagues. ☐
- I understand, and accept, that if I take part in the study I will not gain any direct personal benefit from it. ☐
- I understand the purpose of the study, and how I will be involved. ☐
- I understand that all information collected in the study will be held in confidence and that, if it is presented or published, all my personal details will be removed. ☐
- I can confirm that I will be taking part in this study of my own free will, and I understand that I may withdraw from it, at any time and for any reason, without any legal rights being affected. ☐

I agree to take part in the above study:

Participant
Signed _____ Date _____

Researcher
Signed _____ Date _____

1 copy for participant, 1 copy for researcher

Appendix 4: Focus Group Schedule

Focus Group Themes 18 April 2006
NHS Direct

Context

The study is partly aimed at describing and exploring the interactional process between nurse and caller and the degree to which it is influenced or constrained by the use of algorithms. The calls considered in the research were those that were made where a baby under one year was crying persistently and where the final disposition from the NHS Direct call was either home care, or referral to health visitor. The call data is taken from recorded calls in December (2001), May and August (2002) where the crying baby algorithm had been used.

Themes

- How are the algorithms used?
- Why are they sometimes used differently?
- What is happening during the interaction between nurse and caller?
- What do nurses themselves perceive to be their role in using the crying baby and shaken baby algorithm.
- How do you feel when you get this type of call?
- Do you handle them differently?
- Give transcripts of 3 types of calls (read out) – ask about perception of good practice, ask about SBS question.

Schedule

- Set up recorder and test
- Introductions – first names only
- My introduction:
    - Name, background, qualifications current role.
    - Check that everyone has read and understood the participant information sheet and have signed a consent form (ask to sign again!!).
    - Context and stage of research.
    - Explain that focus group is the final stage of data collection.
    - Opportunity to ask more questions on completion of focus group.

- **Algorithms:**
    - What do you understand about how they should be used?
    - What did your training say about how they should be used?
    - How do you use them?
    - What are the positives and negatives of using algorithms?
    - In terms of nursing practice, did you adapt to using them easily or were they unfamiliar to you, and if so in what way?

- What do you think is happening in the interaction between nurse and caller? (is it just question and answer? Are you establishing a rapport? Do callers wonder why you're asking them unrelated questions?)
- What do you do to affect the interaction?
- My data suggests the algorithms are used differently – why do you think that is?

- **Shaken Baby Question**
  - One of the algorithm questions used to be: "Does the individual feel so exhausted by the baby's crying that they feel they might hurt or shake the baby if the crying does not stop soon?" Even though this question comes up, it's rarely asked – why do you think this is?
  - When you become aware that this is a 'crying baby' call and not a 999, or GP and the baby is not ill, does this effect the way you handle the call – how?
  - What do you think about the algorithm for crying baby? Is there anything you would add or take away? What do you think the parents think?

- **Two calls**
  - Introduce calls. Explain they are being read out because we want to preserve the ID of the nurse dealing with the call. Do not want participants to read them from paper because I want them to hear some of the voice tone that goes on. Explain that after each call I want participants to comment on any aspect they wish to, but in particular with regard to best practice. Calls have been selected not as either examples of good practice or bad practice – but as different practice.

- **Close**
  - Explain that early findings are showing:
    - Direct use of the algorithm – where the whole exchange is clearly driven by the algorithm. (6 calls)
    - Adding to the algorithm – moving in and out of the algorithm and allowing the caller space to talk. (4 calls)
    - Covert completion of the algorithm – all questions asked but not overtly. The algorithm does not govern the exchange.(2 calls)

  - Thanks participants for agreeing to take part in the study. Inform them that they will be informed of results when study is completed. Give contact details if they have any questions between now and then. Ask if participants have any questions.