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Defensive healthcare practice:
Systematic review of qualitative studies and systems-based logic model

Theo Lorenc, Katy Sutcliffe, Claire Khouja, Melissa Harden, Rebecca Rees
Pauline Meskell, Juliette O'Connell, Quan Nha Hong, Amanda Sowden
and James Thomas

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The authors of this report are:

Theo Lorenc, Katy Sutcliffe, Claire Khouja, Melissa Harden, Rebecca Rees, Pauline Meskell, Juliette O'Connell, Quan Nha Hong, Amanda Sowden, and James Thomas.

Editorial and design by: Lionel Openshaw

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SUMMARY

Background

'Defensive practice' refers to clinicians modifying their practice to reduce the risk of litigation or complaints because of negative patient outcomes. This could take the form, for example, of overusing treatments or diagnostics which are not medically necessary, or avoiding certain treatments which are potentially beneficial but risky. Some have argued that the risk of litigation is a major driver of increased healthcare costs, although the evidence is equivocal.

Methods

This review combined two approaches to investigate how defensive practice is understood, how it affects practice, and its potential broader impacts. First, we carried out a systematic review and synthesis of qualitative evidence, including studies of clinicians' views and experiences of defensive practice. This review included 15 studies. Second, we constructed a systems-based logic model to understand the institutional and cultural drivers of defensive practice.

Qualitative evidence synthesis

The findings show that a range of clinical decisions and treatment practices may be motivated by concern for litigation risk, including Caesarean delivery, induction of labour, foetal monitoring, diagnostic testing, and referrals. Many participants also describe over-documentation as a form of defensive practice. Many participants see the threat of litigation as pervasive and unavoidable, and feel threatened by it. However, other motivations also enter into defensive practice: the desire to avoid adverse events; pressure from patients or families; the loss of trust in the clinician-patient relationship; and a broader culture which is seen to be intolerant of risk and suspicious of clinicians in general.

Participants identify several negative impacts of defensive practice on clinicians and patients. It affects clinicians' perceived autonomy and their job satisfaction and may have broader emotional impacts on clinicians. It can lead to overtreatment and overdiagnosis, and poorer-quality care resulting from the diversion of clinician time and effort into documentation. Several participants reported avoiding certain patients, settings or clinical specialisms – particularly those involving patients with complex needs – to reduce litigation risk, suggesting that defensive practice could exacerbate health inequalities for underserved populations. Defensive practice may impair trusting, empathetic relationships between clinicians and patients.

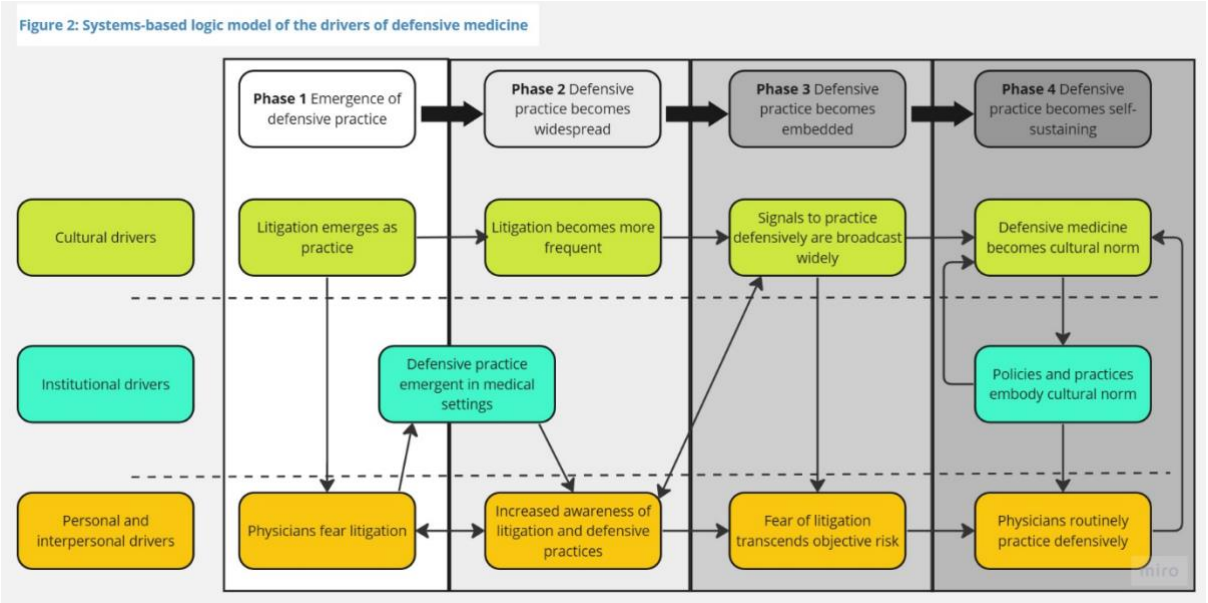
Systems-based logic model

The analysis for the systems-based logic model identifies that whilst defensive practice may have been initially driven by a rational fear of litigation, it appears that over time the fear of litigation has transcended the objective risk of litigation.

The logic model also suggests that the widespread fear of litigation and common awareness of the phenomenon means that defensive practice has developed into a cultural norm. This normalisation has evolved to such an extent that key institutional practices and policies reflect, and thereby further entrench, defensive practice as a cultural norm.

Defensive practice no longer appears to be driven by either an objective or irrational fear of litigation at the micro-system level, but driven instead by an interwoven network of widely-held cultural ideas (macrosystem) and by the embodiment of these ideas in institutional policies and practices (exosystem). These findings are depicted in the figure below.

Figure 2: Systems-based logic model of the drivers of defensive medicine



Conclusions

The findings suggest that defensive practice should be seen not simply as a reaction to litigation risk, but as a focus for a broader range of concerns about clinical practice, including perceptions that clinical roles are being deskilled and that practice more generally is becoming bureaucratised and depersonalised. Reforms narrowly focused on the medico-legal context, without attention to the institutional and cultural processes by which defensive practice becomes entrenched, may have limited scope to reduce overtreatment and improve the quality of care.

1 BACKGROUND

The terms 'defensive practice' and 'defensive medicine'[1] generally refer to clinicians modifying their practice to reduce the likelihood of litigation or complaints as a result of negative patient outcomes. This may include a range of practices, including both overtreatment (for example, ordering unnecessary diagnostic tests or treatments) and undertreatment (for example, avoiding risky but potentially beneficial treatments, or avoiding high-risk patients) (Rinaldi et al., 2019). Defensive practice may have negative impacts on patient care and could also be a driver of excess healthcare costs.

Survey studies have found that many clinicians report practicing defensive medicine. One study of 204 UK hospital doctors found that 78% of respondents reported some form of defensive medicine, most commonly ordering unnecessary tests (59%) or referrals (55%) (Ortashi et al., 2013). Other studies have found even higher rates of over 90% (Sethi et al., 2012, Osti and Steyrer, 2015, Studdert et al., 2005, Summerton, 1995). Although studies consistently report very high self-reported rates of defensive practice, they generally leave unclear how these perceptions play out in reality, and how defensive decision-making becomes established in clinical practice. Other studies have sought to address this gap by investigating correlations between the determinants of defensive practice (for example, self-reported or objectively measured litigation risk) with putative impacts (for example, total healthcare costs) (Carrier et al., 2013, Reschovsky and Saiontz-Martinez, 2018, Jena et al., 2015). However, this body of evidence does not elucidate the causal pathways involved, and the assumption that the link between litigation and costs is driven by individual clinicians' decision-making is questionable; other macro-level factors (to do with the population or the healthcare system) might be at least as important as mediators.

Even when considering individual clinicians, this data may over-simplify how fear of litigation or complaints enters into clinical decision-making. A range of other factors – such as respect for patient choice and autonomy, or the introduction of guidelines or other quality improvements intended to reduce adverse outcomes – may overlap with defensive medicine in the strict sense, and it is arguably impossible to define the latter in a purely objective way. If defensive medicine is defined in opposition to clinically optimal care, there may be an irreducible element of judgement in deciding between the two in practice. Survey studies also find that reports of defensive medicine may vary significantly depending on the framing of the question (Baicker et al., 2015). Hence, it is challenging to interpret the quantitative evidence in terms of causal

[1] Whilst the term defensive practice denotes clinicians other than medics who may practice in this way (such as midwives), the term 'defensive medicine' is more commonly used in the literature. We use both phrases interchangeably within this report to refer to defensive practices among all types of clinicians.

drivers of defensive practice, and a critical attitude to this data seems warranted (Waxman and Kanzaria, 2015).

This aside, there is also a question as to the applicability of these findings. Much of the quantitative research, and the broader thinking about defensive practice, originates in the USA, where the legal and organisational contexts are very different from those in the UK. In the UK, clinicians working in the NHS, and some private healthcare organisations, are covered for personal indemnity by their employer (General Medical Council, n.d.). Thus, the costs of insurance, in general, are not paid by the clinician, and medical defence is provided by the organisation. Policy thinking around defensive medicine in the USA has historically been structured by the perception of a 'malpractice litigation crisis', and the concern about spiralling costs for malpractice insurance (Hicks, 2008, Thompson and King, 1984, Kachalia et al., 2005). This is generally less of a focus in other countries, and indeed some USA work has suggested that defensive medicine may not necessarily be driven by litigation risk in a straightforward way (Bovbjerg et al., 1996). In addition, other influences on decision-making may be much less dependent on the legal and regulatory context, such as loss of reputation or damage to patient relationships (Veldhuis, 1994).

It is thus important to consider questions about defensive medicine within the broader context of clinical practice, and to incorporate insights from more recent literature, to gain a more nuanced understanding of both the impacts which defensive medicine may have on patient outcomes and the healthcare system, and the potential value of interventions to improve sub-optimal care. Qualitative evidence may help to illuminate these broader questions by addressing how defensive practice is understood by clinicians, and how it is enacted in practice. To our knowledge, no previous systematic review has looked at defensive practice across all groups of clinicians. A previous review includes qualitative evidence on clinicians (Rinaldi et al., 2019), but excludes doctors, and, while systematic in principle, it is limited in its searching and synthesis. Our review aimed to synthesise qualitative evidence on defensive practice from all professional groups of clinicians. As an aid to theorising a wider range of possible drivers of defensive practice and to draw out the dynamic interrelations among those drivers we produced a systems-based logic model.

2 AIMS AND METHODS

This review combined two approaches to understand how and why clinicians practice defensively: qualitative evidence synthesis and systems-based logic modelling.

2.1 Qualitative evidence synthesis

The qualitative evidence synthesis (QES) was conducted in accordance with CRD's Guidance for Undertaking Reviews in Health Care (Centre for Reviews and Dissemination, 2009) and reported in accordance with PRISMA guidelines. Data was managed using EPPI-Reviewer Web software. The QES protocol was registered on PROSPERO before work commenced (registration number CRD42020166559).

The QES review question is: What is known from qualitative studies about how clinicians modify their practice due to the fear of litigation, complaints, criminal prosecution and/or professional regulation?

2.1.1 Searching

The QES search strategy for Ovid MEDLINE is shown in Appendix A. Searches for other databases used a translated version of the MEDLINE strategy. The strategy includes a range of thesaurus and free-text terms relating to the practice of defensive medicine, including clinicians' fear of litigation, complaints, or disciplinary action, along with a sensitive filter for qualitative methods (Wong et al., 2004). Searches were restricted to records published in 2000 or later, as older studies are less likely to be relevant to current policy and practice. The searches were not restricted by language. The following sources were searched in January 2020.

- Allied and Complementary Medicine – AMED (Ovid)
- Applied Social Science Index and Abstracts – ASSIA (ProQuest)
- CINAHL (Ebsco)
- Embase (Ovid)
- Maternity and Infant Care (Ovid)
- MEDLINE (Ovid)
- ProQuest Dissertations & Theses A&I (ProQuest)
- PROSPERO – International prospective register of systematic reviews
- PsycINFO (Ovid)
- Sociological Abstracts (ProQuest)

Supplementary search methods were employed to identify further relevant studies. The websites of the General Medical Council, Care Quality Commission, Professional Standards Authority and Health & Care Professions Council were searched. The reference lists of all included studies and systematic reviews were scanned for further studies. In addition, forward citation searching of all included studies was carried out via the Web of Science. Finally, Google Scholar was searched using a simplified version of the MEDLINE search strategy and the first 50 hits were screened for relevance.

2.1.2 Screening

The inclusion criteria for the QES were as follows:

1) Does the study report qualitative data?

> *Include* any study using qualitative methods, for example, interviews, focus groups, ethnography, surveys with open (free-text) questions. *Exclude* purely quantitative studies including surveys with only closed questions. *Exclude* opinion pieces or other articles not presenting primary empirical data. *Exclude but retain for reference checking* systematic reviews of qualitative studies (i.e. reviews which report a search strategy and well-defined inclusion criteria).

2) Does the study report data collected from clinicians?

> *Include* any clinical practitioner.

3) Does the study mainly focus on litigation or complaints?

> *Include* any study with a focus on litigation, complaints, criminal prosecution and/or professional regulation (for example, by professional bodies or regulators such as the Care Quality Commission). *Exclude* studies with a small amount of data on this topic but which do not focus on it.

4) Does the study mainly focus on perceptions of the impact of litigation or complaints on clinical practice?

> *Exclude* studies which focus on clinicians' experience of complaints or malpractice procedures, but do not address how this might impact on behaviour or practice. *Exclude* studies with a small amount of data on this topic but which do not mainly focus on it.

5) Is the study published in English?

We restricted inclusion to English-language studies partly due to lack of resource for translation, and partly due to the challenges of interpreting the nuances of qualitative data in translated text. An initial sample of 10% of abstracts was screened independently by two reviewers and differences resolved by discussion. Agreement at this stage was judged to be adequate, and the remaining abstracts were screened by a single reviewer. The full text of every reference meeting the criteria, or where it was unclear whether they met the criteria, was reviewed and re-screened against the same criteria by two reviewers independently.

2.1.3 Quality assessment, data extraction and synthesis

We assessed the quality of studies in the QES using Hawker et al.'s tool (Hawker et al., 2002). This tool provides a structured instrument to evaluate quality across several methodological domains, including sampling, data collection and analysis, ethics and bias, and transferability. Studies were not excluded nor downgraded based on quality

assessment rating, but information on study quality was used informally to guide the synthesis. We extracted contextual data on the studies including information on the study methods, the sample and the setting. We coded qualitative data line-by-line in EPPI-Reviewer and used inductive thematic coding to produce an overall summary of the themes across the included studies. Quality assessment and contextual data extraction were carried out by one reviewer and checked in detail by another; thematic coding was carried out by one reviewer and the analysis reviewed by another.

2.2 Systems-based logic model

Logic models typically map out the theorised pathway between an intervention and its anticipated outcomes, in order to develop a summarised theory of how the intervention works (Kneale et al., 2015). *Systems-based logic models*, however, aim to depict a complex system and the important elements and relationships within that system (Kneale et al., 2015, Rehfuess et al., 2018). To supplement and locate the evidence on clinician experiences identified in the QES, we developed a *systems-based logic model* to theorise and graphically depict the system of institutional and cultural drivers of defensive practice. A secondary aim of the systems-based logic model was to identify possible relationships between different drivers. To generate the systems-based logic model we examined both empirical and non-empirical literature, drawing on a previous example of this approach (Kneale et al., 2020).

The question that drove the development of the systems-based logic model is:
What are the institutional and cultural drivers of defensive practice described in empirical and non-empirical literature and how are these drivers theorised to interact?

2.2.1 Searching

To build the systems-based logic model we employed a purposive, rather than comprehensive, approach to searching (Noyes et al., 2019). As the aim was to illustrate the range of potential drivers of defensive practice, and to theorise their interrelationships, rather than to assess the precision or statistical certainty of the evidence (Kneale et al., 2020) the search was designed to identify a sufficiently diverse set of papers to enable examination of defensive practice from different angles, disciplines and perspectives.

First, we engaged with the studies included in the QES; these were considered ‘seed’ papers. Our analysis of these revealed they were predominantly from the disciplines of midwifery and obstetrics. To increase diversity of discipline we performed a search using the phrase ‘defensive medicine’ on Microsoft Academic Graph (a comprehensive repository of global research that is searchable within EPPI-Reviewer (Thomas et al., 2022) and purposively selected relevant empirical and non-empirical literature from disciplines other than midwifery and obstetrics (for example, general practice, mental health, general surgery, emergency medicine, etc.).

2.2.2 Study selection

As per the approach used by Kneale et al. (2020) we did not specify or use formal *a priori* inclusion criteria to select studies to contribute to the logic model, but aimed to include studies which:

1. Discussed defensive practice in relation to healthcare;
2. Were from a country with a healthcare system comparable to the UK (i.e. an OECD country);
3. Contained in-depth discussion of defensive practice (i.e. those with only brief mention of defensive practice were not included);
4. Were published in the English language.

2.2.3 Synthesis

We initially employed inductive coding, extracting author comments or research findings relating to drivers of defensive practice and iteratively developing an emergent coding framework. The emergent themes from this initial inductive work revealed that drivers of defensive ranged from being very proximal to the healthcare practitioner (for example, having personally experienced litigation previously) through to very diffuse and distal drivers (for example, the nature of the legal system). We drew on Bronfenbrenner's Social Ecological Framework (Bronfenbrenner, 1979) to categorise the different types of driver. Bronfenbrenner's framework is comprised of four social-ecological levels. The *'microsystem'* focuses on the individual in their immediate environment or setting; the *'mesosystem'* focuses on interactions experienced between an individual and others; the *'exosystem'* focuses on '*the major institutions of society'* that are not immediate settings containing the individual, but which shape or impinge on those settings such as the world of work, the mass media, and agencies of government; and finally the *'macrosystem'* is described by Bronfenbrenner as referring *'not to the specific contexts affecting the life of a particular person but to general prototypes, existing in the culture or subculture, that set the pattern for the structures and activities occurring at the concrete level'* (p.515). Bronfenbrenner's assertion is that social research must examine '*systems of interaction not limited to a single setting and must take into account aspects of the environment beyond the immediate situation containing the subject*' (p.514).

The views and experiences of clinicians explored in the QES primarily consider the multiple 'immediate environments' within which they exist. For the systems-based logic model we began to purposively explore the *'larger social contexts, both formal and informal, in which the settings are embedded'* and to consider how phenomena are influenced by factors *'within and between'* the different contexts (p.514). Thus, the second stage of data extraction and synthesis focused on the 'macrosystem' and 'exosystem' levels to identify whether cultural or institutional factors may drive defensive practice. We stopped extracting information from further papers once we had achieved saturation of themes, i.e. new papers provided no new ideas or themes regarding institutional or cultural drivers. We examined whether the emergent themes

were concordant with findings from the QES. Because we were drawing on non-empirical papers, and extracting non-empirical evidence from empirical papers (i.e. author discussion rather than research findings), quality assessment was not undertaken. Following the Kneale et al. approach, we used Miro software in virtual meetings to organise the themes into logical chains, where possible, drawing on the information contained within the studies themselves to theorise the sequence of drivers.

In the final stage of synthesis examined whether the themes identified for the systems-based logic model were consistent with the QES findings. Since the two pieces of work were conducted by independent teams, we were able to check the soundness of the logic model analysis, by examining whether emergent findings were supported by the QES.

3 QES RESULTS

3.1 Flow of literature through the QES review

This is shown in Figure 1. A total of 12,360 unique records was located by the database searches; supplementary searches provided an additional 109 records. After screening, 15 studies (17 study reports) were included in the review. (A handful of studies could not be accessed, partly because of restrictions due to the COVID-19 lockdown which was in place while the review was being conducted.)

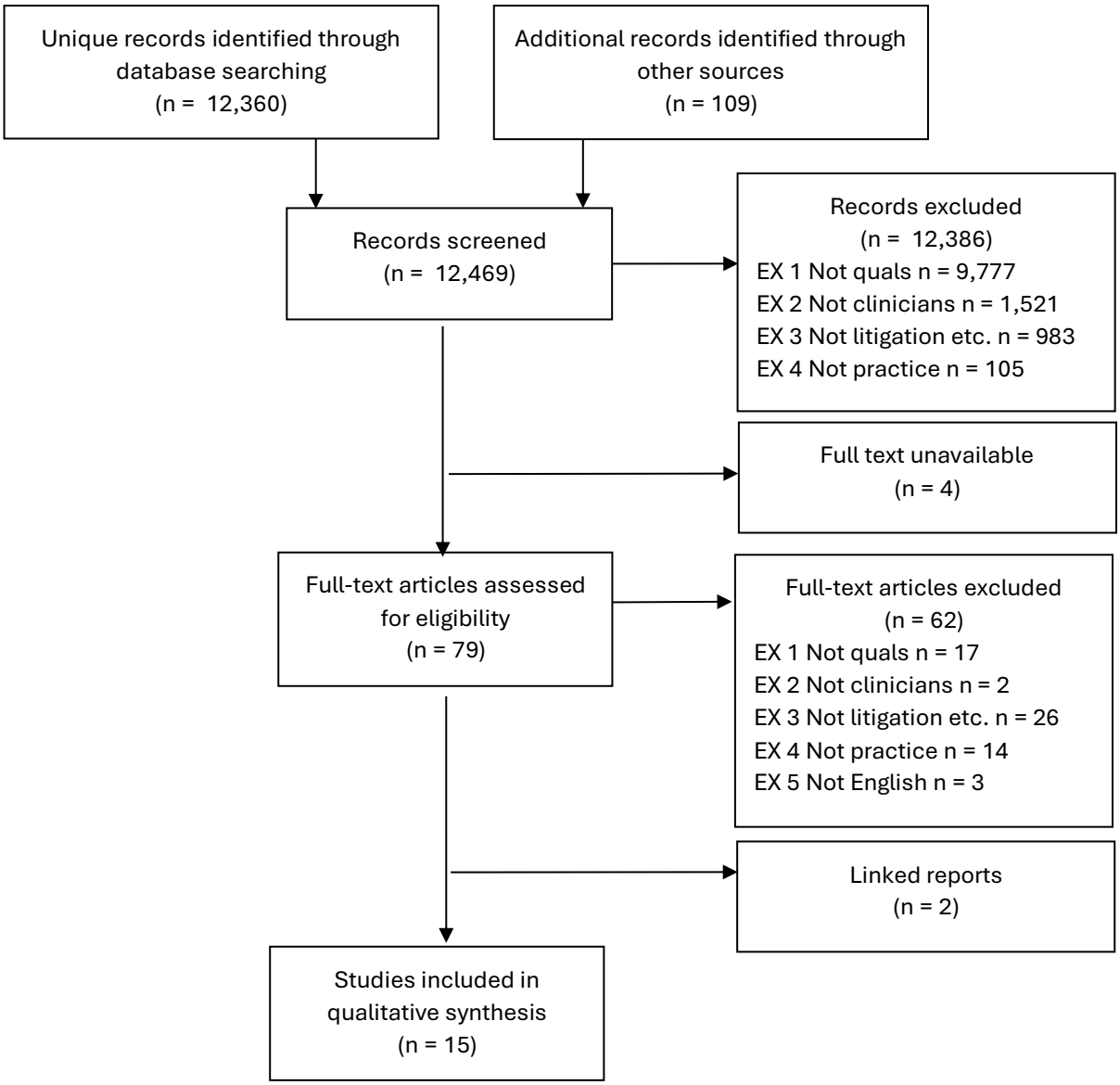


Figure 1. Flow of literature through the review

3.2 Study characteristics

The results of quality assessment for studies in the QES are shown in Appendix B. Overall, the quality of the included studies was moderate to good; however, there were weaknesses across the evidence base in sampling (question 4) and transferability (question 8).

Contextual information about the studies is shown in Table 1.

Table 1. Studies included in the review

Short ID	Reference(s)	Country	Setting	Population	Sample size	Study focus
Assing	Assing Hvidt et al. (2017); Assing Hvidt et al. (2019)	Denmark	Primary care	Doctors	28	Perceptions of defensive practice
Bradder	Bradder (2007)	England + Wales	Obstetrics / midwifery	Doctors	50	Risk and litigation in clinical practice
Broom	Broom et al. (2017)	Australia	Hospital	Doctors, pharmacists, nurses	29	Influences on antibiotic use
Cunningham	Cunningham and Dovey (2006)	New Zealand	Hospital	Doctors	12	Defensive practice and complaints experience
Hammer	Hammer (2017)	Switzerland	Obstetrics / midwifery	Doctors	26	Risk of malpractice claims
Hindley	Hindley and Thomson (2007)	England	Obstetrics / midwifery	Midwives	58	Defensive practice as motivation for use of foetal intrapartum monitoring
Hood	Hood et al. (2010)	Australia	Obstetrics / midwifery	Midwives	16	Views of regulation / litigation
Manuel	Manuel and Crowe (2014)	New Zealand	Mental health	Nurses	10	Clinical responsibility / accountability
Papadopoulos	Papadopoulos (2007)	USA	Obstetrics / midwifery	Doctors	15	Threat of malpractice litigation
Robertson	Robertson and Thomson (2016)	England	Obstetrics / midwifery	Midwives	22	Litigation impact on practice

Ruston	Ruston (2004)	UK	Primary care	Doctors	85	Referral decisions for patients with breast problems
Spendlove	Spendlove (2018)	England	Obstetrics / midwifery	Doctors, midwives	37	Experiences of risk
Surtees	Surtees (2010)	New Zealand	Obstetrics / midwifery	Midwives	40	Risk and impact on practice
Symon	Symon (2000a); Symon (2000b)	Scotland + England	Obstetrics / midwifery	Midwives, doctors	23	Views of defensive practice
Wier	Wier (2017)	England	Obstetrics / midwifery	Midwives	20	Professional regulation

The most studied area of clinical practice was obstetrics or midwifery (n=10). Clinical populations included doctors (n=9), midwives (n=7) and nurses (n=2). A range of countries was represented, **with seven studies from the UK**, two from other European countries, five from Australia or New Zealand and only one from the USA. This contrasts with the quantitative literature, which (as noted in the background above) has been heavily dominated by USA data.

3.3 Structure of the QES

We developed a framework for coding the QES findings using three broad categories, as shown in Table 2. These categories were developed inductively through the coding process, rather than providing an *a priori* structure. The first includes specific practices which participants defined as defensive, and their general views and definitions of defensive practice. The second includes factors which participants identified as motivations for or influences on defensive practice. The third includes perceived impacts and consequences of defensive practice. In practice, the themes are not sharply defined: for example, 'treatment' and 'testing and monitoring', considered as examples of defensive practice, overlap with 'impacts on patient care', considered as consequences of it. Nonetheless, the themes provide an initial way into the data.

Table 2. Thematic codes

What is defensive medicine?	General views
	Documentation
	Treatment
	Testing and monitoring
Motivations for defensive medicine	Litigation and complaints
	Relations with clinical peers
	Guidelines and metrics
	Adverse patient events
	Patient factors
	Social factors
Impacts of defensive medicine	Professionalism and autonomy
	Impacts on patient care
	Communication and relationships
	Adherence to guidelines
	Emotional impacts

3.4 What is defensive medicine?

3.4.1 General views

Participants in nine studies expressed views in general terms on the prevalence of defensive practice, with most stating that it was frequent both in general and in their own individual practice (Assing, Bradder, Hammer, Hood, Manuel, Papadopoulos, Spendlove, Surtees, Symon).

> I just make very, very conservative decisions about everything. (participant, Hood)

> We're very much into ... butt covering, when our practice is driven by fear, rather than the patient's best interest. (participant, Manuel)

> [T]here are situations where it's gone before a court, and they'll always be twisted ... So people have not necessarily got the confidence or the conviction to carry out the care that they want to give because they're always thinking of, what if something goes wrong, and I think that's where people are behaving defensively really. (participant, Spendlove)

However, while many participants described practicing defensively, others stated that they never did so, in some cases arguing that this would be an unjustifiable departure from clinically optimal care. Participants in Hammer's study regarded the idea of defensive medicine as a "scarecrow" (participant, Hammer) rather than an accurate description of their experience. There is considerable diversity of views among participants, with a minority strongly rejecting the idea that fear of litigation is a major factor impacting on practice.

> [Participant] Yes, well, I would guess [defensive practice] it's to do with doing things that you are only doing because you are worried you might get sued. Or you're modifying your practice because of that.
> [Interviewer] Do you feel that you have ever modified your practice because of that?
> [Participant] No. I think it's a load of rubbish. I think I want to do the best for my patient and that's it ... (participant, Bradder)

> All interviewees strongly rejected defensive behaviours in medical practice, arguing that it would mean practicing with fear and adopting dysfunctional clinical reasoning. In their views, properly managing the risk of malpractice claims required not paying excessive attention to it in day-to-day medical practice, in order to minimise its influence on reasoning and decisions. (author, Hammer)

This diversity of views may relate to the point that defensive motivations largely emerge in the "grey area" (participant, Bradder) of clinical judgement, where there is room for legitimate disagreement about the clinically best course of action. What one

person regards as defensive practice, another might see as appropriate caution. Thus, whether a given decision is regarded as primarily defensive may be a matter of judgement and context, and the abstract "common knowledge" (participant, Surtees) that defensive practice is widespread may not be reflected in how clinicians understand specific cases.

> Every potential case is a medico-legal case, so you've got to make your own safeguards and put your own safety measure in place, so what's the harm in being cautious as long as the woman is cared for and the baby is delivered safely? (participant, Spendlove)

> ... I mean in practice there's that whole thing of what should we do in different situations and so often while we say we know that's probably right it's common knowledge that we're doing something to cover our butts. (participant, Surtees)

These issues of definition also reflect the finding that while the phrase 'defensive medicine' was widely understood by participants, and most could rehearse the basic theory behind the idea, their actual understanding of the concept in practice was more diverse than the theory suggests. Participants' strong agreement with the theory was not always borne out by concrete instances of it in practice. This is partly an artefact of the data elicited in the studies, which often focused on responses to the theory rather than on understanding how it plays out. However, a few studies suggest that this is a feature of participants' narratives and experiences as well. Studies which did go more deeply into this (particularly Assing and Bradder) found that their enacted understandings of defensive practice often had less to do with fear of litigation specifically, than with broader shifts in clinical practice and regulation.

> With few variations, GPs stated that they understood DM as medical actions performed without medical indication to 'cover one's back' and to secure oneself against patient complaints. Interestingly, however, when exploring and discussing the phenomenon of DM more in depth, several of the GPs found that this understanding was not sufficiently comprehensive when considering the plethora of daily defensive actions in general practice. Across groups, understandings of DM were broadened to involve all those unnecessary and meaningless medical actions performed due to external demands that run counter to the GP's professionalism and common sense. (author, Assing)

> Although in a classic 'cause' and 'effect' simplistic response most informants in the study equated defensive medical practice with the risk of litigation and the performance by doctors of 'unnecessary' tests and/or procedures [...] when asked most clinicians were unable to attach simplistic 'cause' and 'effect' explanations to otherwise 'reflexive' clinical encounters or risk situations. (author, Bradder)

3.4.2 Documentation

The most mentioned change in practice across all the studies was an increase in documentation, which was identified as a form of defensive practice in 12 studies (Assing, Bradder, Cunningham, Hammer, Hindley, Manuel, Papadopoulos, Robertson, Spendlove, Surtees, Symon, Weir). Looking across the studies, it appears that excessive documentation, rather than decisions about treatment or diagnosis, was the primary example of defensive practice; Bradder notes that the theme of documentation was "[o]ne exception to the general lack of consensus over defensive strategies" (author, Bradder).

Unlike some of the other themes discussed above, the link to the fear of litigation and complaints is very clear here. Participants described the need to document every aspect of clinical care in anticipation of potential lawsuits or complaints. Participants' remarks on documentation revealed a strong sense of a pervasive practice driven by a generalised fear of litigation. It is not enough to demonstrate competence as a clinician, or to make decisions in patients' best interests; these decisions must be constantly recorded and justified. Variants on the phrase 'if it's not written down it didn't happen' were used by several participants (Bradder, Weir). Participants' own individual experiences or judgements of litigation risk do not seem to be a major factor here. Rather, the imperative to "cover oneself" represents an internalised imperative which applies across the board.

> Definitely, we are much more careful to document everything ... you know as more and more litigation goes on ... you have got to be very careful to document. You are constantly thinking about covering your own back. (participant, Bradder)

> There's a lot of blame that often gets pointed towards nurses, and words like 'negligence' are bandied around. So there is definitely the feeling that, should my notes need to go somewhere, I want to know that I have documented as thoroughly as possible the situation and my assessment. (participant, Manuel)

> You have to build that body of evidence to back you up if anything bad occurs. (participant, Papadopoulos)

> I mean all your documentation is all tied up with litigation, the whole lot. You write screeds and screeds to cover yourself. All the time covering, covering, covering ... whether it's right or not. (participant, Surtees)

However, fear of litigation is not the only factor driving defensive over-documentation. Various regulatory and quality management processes were also identified by participants as drivers of the demand for documentation. Guidance and targets produce an increasing demand for paperwork to assess performance or provide feedback, which some participants identify as a further dimension of defensive practice (see further 'Guidelines and metrics' below). Documentation is thus

overdetermined as a theme, suggesting how defensive practice more generally can encompass both an individualised fear of hypothetical negative events, and the immediate practical requirements exerted by the institutional and regulatory settings within which clinicians work.

> Another recurring theme when reflecting on own experiences with DM was the demand to document (what some of the GPs described as 'limitless, meaningless documentation') that the government policy had imposed on the GPs for quality appraisal purposes. One practice that was particularly described as defensive by the GPs was the documentation of patient records involving long enumerations of negative clinical findings. (author, Assing)

> Dare I say, ticks in all of the risk boxes just helps insurance for the hospital, government targets and all that, it's something we just have to do, but sometimes I think they lose a little bit of focus of what's actually on the front line, taking you away from providing basic care to women to perform these pointless tasks. (participant, Spendlove)

Participants identified several harms resulting from the perceived requirement to document more than what was clinically useful, strongly rejecting the idea that it is a harmless annoyance (see further under 'Impacts of defensive practice' below). Several participants pointed out that time spent writing up notes is time taken away from caring for patients (Hammer, Robertson, Spendlove, Symon, Wier). In some cases, this is a simple practical point, but in others it points to a broader concern that the internalisation of the demand for documentation distorts clinicians' sense of their own role, such that they become more focused on 'correct' documentation than on responding to patients' real needs (see further 'Impacts on patient care' below). It is the more intangible dimensions of care in particular – emotional support and the development of a rapport with the patient – which are seen to lose out in this process.

> Unfortunately, today young [doctors] are first taught to keep patients' files, to make cast-iron files in case of an attack, and only then they think of their patients, that's the sad evolution I see today. In the end, they no longer have time to see patients, patients get information from nurses or nurse-assistants, it's a pity. (participant, Hammer)

> People practise very much more defensively, you are very aware of your paperwork; it is almost like 'don't look after the woman, just make sure your paperwork is immaculate', which is not good. (participant, Robertson)

> [T]here's so many things that are pulling us into a range of places that makes being with women and caring for women so hard! I mean I look back … 27 years ago when I first entered into midwifery and I look at what you would've done as records then to what you do now, and you think, well where's the time to actually look after the women? (participant, Spendlove)

> There are times when I think we're writing far more and not giving as much physical support. When you go in to see somebody, instead of rubbing her back you're scribbling in the notes. (participant, Symon)

As noted above, the need for documentation may be a driver of overuse of diagnostics and monitoring procedures. Over-documentation may also impact on patient care because it distorts the content of the documentation itself: the more it is driven by legal and regulatory requirements rather than by clinical judgement, the less useful it is for informing clinical decision-making. Partly this is a result of sheer quantity and a checklist-driven approach, which mean that much of what is in the notes is noise which detracts from a clinically meaningful picture. There is also a suggestion in some cases that documentation is driven by strategic concerns rather than purely the desire to record information.

> [Participant 1] All the documentation that is being imposed on us from outside, because we have to secure ourselves, it's limitless, meaningless documentation...
> [Participant 2] I strongly agree with you ... and it ends up giving rise to an even higher risk of making mistakes, of getting confused and of losing oversight ... just because we sit there and write one page after another without communicating what this is really about. (participants, Assing)

> [W]e've got one consultant who always – you know, he doesn't go on the ward round with you, discussing the patients with you. But he says, 'I'd better pop into that, you know, to that room, just you know, for 'political reasons''. He'll go in and write something in the notes, and not talk to the people who are actually looking after the patient, and just wander off again. (participant, Bradder)

For analogous reasons, some participants felt that over-documentation impaired communication with patients by making information less clear and useful, and could increase patients' anxiety by overemphasising potential risks (Hammer). However, views here were not uniformly negative. A few participants expressed a more positive view, linking documentation to an increased emphasis on clear communication and informed consent, and seeing this as on balance a positive change in practice (Hammer, Papadopoulos).

> We're made aware of dialogue with patients, of informing, of explaining all we do [...] we're a little bit forced by the increasingly litigious nature of our specialty but I think that on the whole it's rather beneficial. (participant, Hammer)

3.4.3 Treatment

Relatively few participants mentioned specific treatment decisions which constituted defensive medicine. The most mentioned example was Caesarean section, especially after a previous Caesarean. Participants in five studies mentioned that this procedure

was often undertaken for defensive reasons when not clinically necessary (Bradder, Cunnningham, Hammer, Spendlove, Symon).

> [T]he delivery of a breech is a classic example. Let us put it this way ... anyone with any sense will resort to a caesarean section. That is defensive medicine. Maybe it's my age group. It comes under the heading: life is too short for this hassle. (participant, Bradder)

> If I'm not happy I'm more likely to perform a caesarean section rather than trying for a vaginal birth. (participant, Cunningham)

However, participants also noted that the factors influencing decision-making are complex, and that defensive concerns may be present "in the back of one's mind" even where decisions are clinically justifiable. To say that Caesarean section is often a defensive practice does not necessarily mean that fear of litigation is the predominant motivation, only that it is present at some level.

> You could argue the baby is ill. To subject them to the stress of induction of labour is illogical. To give them an elective caesarean section is a planned procedure, with all the best people there, is the better decision. In real life there's always a grey area in the middle where you can't make up your mind. (participant, Bradder)

> In the past where one might have reviewed a situation, had another look, now I think we would probably do a caesar ... but [obstetricians] are not doing a caesar for litigation, they're doing a caesar to get the baby out, but I think that the threat of litigation is always there in the back of one's mind. (participant, Symon)

There is thus an irreducible ambiguity in many cases of defensive practice which participants see as inherent in the nature of practice, because clinical judgement cannot be eliminated in favour of a purely objective account of the reasons behind a decision. At the same time, there may be systemic incentives not to clarify this ambiguity where it may make defensive practice too explicit.

> It seems as if it is virtually impossible to separate out all the factors involved in such a decision. It would be comforting to think that the prospect of being sued is not the prime reason, and it is certain that the fear of litigation will not be included in the case notes under 'Indication for operation'. (authors, Symon)

Other than this specific area, few clinicians identified specific treatment practices which they felt frequently represented defensive practice. Two study authors remarked that participants either identified few specific examples, or examples which were arguable when discussed in more depth (Bradder, Hammer), even though many participants in these studies were familiar with the concept of defensive medicine and clearly endorsed the broader narrative behind the term.

> Although the term defensive medicine had become institutionalised, in the sense that all clinicians in the study had heard of the phenomenon and could comment on its practice, the data produced little definitive consensus on precisely what form or forms this pejoratively constructed defensive strategy took. Indeed, when I probed doctors' answers more closely, even those doctors who claimed to practise defensive medicine usually framed their medical decision-making around issues of process, contingency and justification. (author, Bradder)

3.4.4 Testing and monitoring

Participants in ten studies mentioned the overuse of diagnostic tests or monitoring as an aspect of defensive practice (Assing, Bradder, Broom, Cunningham, Hindley, Hood, Robertson, Spendlove, Surtees, Symon). Clinicians may order tests or examinations that they know are unlikely to provide clinically useful information, but where there is an outside possibility of identifying serious problems.

The immediate motivations are somewhat heterogeneous. Participants in one study mainly linked defensive overuse of tests to patient pressure (Cunningham), while in other studies the focus was on a more generalised fear linked to the possibility of adverse outcomes. It is noticeable that while participants cited these cases as examples of defensive practice, they rarely saw them as specifically driven by fear of litigation or complaint.

> A way of minimising this fear in the daily work would be to reduce medical uncertainty to the lowest possible level by ordering further tests and examinations (author, Assing)

> [I]t's to do with what you do know, and what you don't know, and you would be scared of not doing various investigations in case you miss something that you didn't think you were looking for in the first place. (participant, Bradder)

> I order more tests. I will often agree to tests or treatments if patients are demanding, although medically I feel these are not justified. (participant, Cunningham)

Again, the most specific and detailed data comes from the obstetric context, where electronic foetal monitoring (EFM) is frequently mentioned as an example of defensive practice, addressed in five studies (Hindley, Hood, Robertson, Spendlove, Surtees). These findings are much more explicit as to the link between fear of litigation and overuse of monitoring than the findings from other contexts cited above, which are rather vague as to motivation. Several participants in studies of midwives reported that EFM is widely used in cases where it has no clinical value and where midwives themselves would not choose to use it, due to a perception that it is legally risky not to use it in case there are any problems with the birth. Foetal monitoring was

particularly valued for providing documentation which could be useful in defending any legal challenge (Hindley, Surtees); see further under 'documentation' below.

> I'm sure we do EFM because they are always on about litigation, and you know if you don't get it checked or don't document it, then if something did go wrong ... but I mean that's very defensive kind of practice isn't it? (participant, Hindley)

> I hate to say it has affected my practice in certain ways that if I do get these decelerations in second stage now, even if the woman is about to deliver, my heart panics and I think should I put a monitor on or not ... so of course you get it ordinarily in a low-risk woman now and you think, do I put it on, just, is it just to have proof? Because is that what the law is now asking me? (participant, Robertson)

In two studies (Hood, Spendlove), the overuse of monitoring as well as other forms of diagnosis and intervention were linked to a medical model of birth. Both midwives and, to some extent, obstetricians perceived a difference in professional culture between midwifery and obstetrics, and saw over-monitoring and overtreatment as driven by a shift in practice in favour of the latter. The theme of defensive practice thus resonates with a broader set of concerns about the medicalisation of birth and the perception that care is driven by technology rather than the best interests of the patient, and about the loss of clinical autonomy on the part of midwives (see 'Professionalism and autonomy' below).

> Unless they're really passionate ... midwives find it very difficult to challenge, because once they're [women] on that path and the obstetricians are involved, that's it ... the obstetricians want to manage care the only way they know how, to get that syntocinon up [artificial hormone infusion to induce labour], get them on that monitor [electronic device to monitor the foetal heart beat] and get them delivered as soon as possible. (participant, Spendlove, parentheses added by study author)

Overuse of testing and monitoring may be a problem for several reasons. It obviously involves unnecessary costs for the healthcare system, and in some cases can involve unpleasant or potentially risky procedures for the patient (Cunningham). A broader issue, raised in studies of foetal monitoring as well as in other contexts, is that the use of such diagnostics without specific clinical reasons may identify issues or abnormalities which were not previously apparent, and which might well not actually harm the patient, but which clinicians feel they need to address once they are identified. Overdiagnosis (and to some extent medicalisation more broadly) may thus be a driver of defensive over-caution in treatment, and potentially a driver of inappropriate treatment if decisions are driven more by tests than by a holistic clinical judgement.

> [S]ometimes you've got perfectly healthy patients, then you do this test … it comes back positive with some organism and then you're stuck with, "Do I treat the bug or do I treat the patient?" I don't think there's a lot of science to it sometimes. (participant, Broom)

> Now of course you do a lot more monitoring so you tend to see heart rates doing funny things which you didn't see before because you didn't use a monitor, you listened in regularly and worked it out for yourself. But now with the monitoring you see all sorts of things … oh, I loathe monitoring. Once you get that monitoring, really just about everything seems to be potentially dangerous. (participant, Surtees)

3.5 Motivations for defensive medicine

3.5.1 Litigation and complaints

All studies referred to litigation, complaints or sanctions by regulatory bodies as a driver of defensive practice (as this was an inclusion criterion for the review); nine studies presented more specific data relating to this theme (Assing, Bradder, Hammer, Hindley, Hood, Ruston, Spendlove, Surtees, Wier). A range of specific negative outcomes was mentioned here, including formal complaints from patients or being suspended or struck off by professional regulators, as well as litigation.

> There are obstetricians and midwives that are having complaints put in about them […] So people have not necessarily got the confidence or the conviction to carry out the care that they want to give because they're always thinking of, what if something goes wrong, and I think that's where people are behaving defensively really. (participant, Spendlove)

> One ends up referring some patients with a sort of medico-legal fear behind the scene because you know if you go and reassure someone, and then she turns up in six months' time with a carcinoma it's not going to look good in court. So there is some medico-legal pressures on us to refer some patients to the breast clinic. (participant, Ruston)

> Defensive practice … that is what it's all about, we don't practice how we feel we should … midwives are toeing the line because they are frightened of losing their registration … and that's your livelihood isn't it? (participant, Wier)

Several participants expressed a view that litigation was an inevitable "part of the job" (participant, Bradder), particularly in the obstetric setting. However, relatively few participants referred to their own actual experience of being subject to lawsuits or complaints. "It must be stressed that risk of malpractice claims as a true cause for concern in our sample was seldom referred to precise facts, concrete events or experiences" (authors, Hammer). Rather, the fear of litigation is diffuse and may be driven by a range of factors beyond direct experience (as explored in the rest of this

section and in the systems-based logic model in chapter 4). This may make it more consequential, as it can have impacts on practice even where relatively few cases actually come to court.

> Litigation can be direct and indirect … once litigation has happened to one of the doctors, all of the doctors around them will be indirectly affected; because they feel that they may be in that situation, tomorrow or the day after tomorrow. This is indirect. I think the indirect one is worse than the direct one, because actually, the direct one will affect one doctor; but the indirect one will affect hundreds and hundreds of doctors. (participant, Bradder)

Indeed, even at an individual level this broader fear may be more important than the direct experience of complaints. Assing et al.'s study reports that "[e]very GP had experienced being either a subject or cosubject of a patient complaint at some stage in their career" (authors, Assing), but also suggests that this was not a major driver of changes in practice, perhaps because most of these complaints were felt to be "unjustified or ridiculous" (authors, Assing). While it is not entirely clear how much impact these complaints had on the clinicians involved in this study, it seems clear that the experience of complaints in isolation is not a sufficient condition for practicing defensively. Rather, clinician's reactions to the risk of complaints or litigation are influenced by a range of broader factors.

One important influence is the views of professional peers. The fear of litigation appears to have more impact, or at least is seen to be more problematic, where clinicians feel that they are not supported by their institutions or their professional peers (see further under 'Relations with clinical peers' below). Litigation may be feared as much because of the loss of professional reputation as for its direct impacts. On a more basic level, the sudden loss of social support is a key theme in these narratives. Where participants describe their fears about litigation in more specific emotional terms, a detail which stands out in several studies is the sense of being 'on your own'. Complaints which professional peers regard as well-founded – or have themselves initiated – are a more salient object of fear than those which are agreed by peers to be frivolous.

> And we have seen how easy it is to have two colleagues stand up together and state that the colleague who has made the error must be completely at sixes and sevens, right? Total stupid decision, how on earth could this happen? (participant, Assing)

> I've been practicing medicine for 37 years and things have changed a lot now. If something went wrong 37 years ago, the patient would say well thank you very much for trying your best, and your colleagues would say to you, well I know you did what you could, now, if you make a mistake the patient says, how come that went wrong, and should I go to a solicitor and see if I can sue you, and your

> colleagues are looking at you thinking, really?! Was that a problem, do we need to look at that? (participant, Spendlove)

> I think because of the blame culture, we're frightened to do our own job, because if you don't do it perfectly and something happens, you're going to be sued and … your name's going to be dragged through the mud … Sometimes you feel a little bit isolated, so you don't trust the people that are there allegedly to support you. (participant, Spendlove)

> I've even had complaints made against me, and in all cases … none of the complaints were actually initiated by the client, they were initiated by medical people and I just find that really frightening. I've got a friend who's been through it who gave up midwifery because of an investigation that was run by the Nursing Council, which just absolutely destroyed her. And again, a complaint that was initiated by a GP. The GP just said to the woman 'oh we'll put a malpractice claim in.' (participant, Surtees)

3.5.2 Relations with clinical peers

As suggested by the quotes above, the views of clinicians' professional peers may also influence defensive practice (Assing, Bradder, Broom, Cunningham, Manuel, Robertson, Wier). This may take several forms depending on the institutional context. Several participants described consultation with colleagues, often more senior clinicians, as a form of defensive practice, in that it helps to mitigate risk for the individual (Bradder, Broom, Manuel, Robertson, Wier). This may take several forms, from informally seeking a second opinion to making unnecessary diagnoses or referrals to shift formal responsibility for the patient.

> What they do in the lower echelons since they are 'at sea' and don't know what to do, they do tests for spurious reasons: so they can justify bringing the patient back in three or four months to be seen by someone else. (participant, Bradder)

> If there's like a major change in presentation or major change in risk factor, I probably would consult with the doctor, if I was unsure, yeah, just to protect my butt basically, not for anything else. (participant, Manuel)

> Being aware of the NMC [Nursing and Midwifery Council] has caused me to act differently … there are some decisions that I do not want to make on my own, so I will involve other people. (participant, Wier)

This may reflect a lack of confidence or experience among junior staff; this was particularly identified by more senior clinicians in Bradder's study as a driver of inappropriate testing and referrals (although apparently less so by junior clinicians). As against this, participants in Hood's study suggested that newly qualified clinicians were less likely to practice defensively as they had not had experience of litigation or adverse outcomes.

Decisions to admit or refer patients may also be a driver of defensive practice. In some cases, specific services may have criteria governing admission, for example, regarding diagnostic tests. Referrals may also be driven by regulations or clinical guidelines, sometimes against the referring clinician's own judgement (see 'Guidelines and metrics' below).

> I mean, they stand there laughing at us when we call from the emergency service and we want to hospitalise somebody: 'No, you can't just do that without measuring both this and that and without having a broad blood picture and having cultivated the blood and x-raying this and x-raying that.' (participant, Assing)

> These practices resulted from the system-imposed demand to comply and implement evidence-based standardised care such as clinical guidelines, fast-track packages (eg, cancer packages) and treatment guarantees. According to the GPs, these imperatives often resulted in 'thin' or 'nonsense' referrals. These actions were considered to be defensive because they were more substantiated by a pressure to live up to political regulations and time warrants than to meaningful clinical decision-making. (authors, Assing)

More informally, clinicians to whom patients are referred may feel they have no choice but to offer treatment or diagnostic tests recommended by the referring clinician, even if they are sceptical about whether this is necessary.

> It gets really difficult when they have already written down their suggestions for further diagnosing and then the patient is already expecting you to refer for further diagnostics – then we are kind of checkmate! (participant, Assing)

Conversely, clinicians may feel the need to carry out treatment to justify a referral.

> There's like a compulsion to do something as well, like if you ring a consultant to say you've seen a patient, and done X and Y, it sounds a lot better if you actually have given them some form of treatment, opposed to saying watch and wait. If they trust you and they respect you that's fine, and sometimes that's the most appropriate way, but I think when you're junior, they expect that you've given some form of intervention[.] (participant, Broom)

As the last part of this latter quote suggests, these pressures are bound up with the institutional settings and relationships of authority within which clinicians practice. This is also brought out in the analysis in Bradder's study, which suggests that relations with peers should be contextualised within the institutional frameworks and hierarchies which govern clinical decision-making.

> And I think the juniors are very aware of that ... I think they do feel vulnerable. They obviously don't want to get into trouble, sued. They don't want to have trouble with management [...] (participant, Bradder)

> [D]efensive medicine is practised not simply as a direct consequence of doctors' fears of litigation. Rather, so-called 'unnecessary' or superfluous tests, procedures or referrals arise from contingency: as a *defensive* response to uncertainty, indeterminacy and risk in clinical situations in which junior clinicians frequently felt were largely beyond their control. (author, Bradder)

This may manifest as a heightened awareness of the boundaries of the individual clinician's responsibility within the institutional setting.

> I am fearful of a patient dying on my watch. I would like them to survive until the morning and die later on. (participant, Broom)

3.5.3 Guidelines and metrics

The role of guidelines in relation to defensive practice is complex. As explored below under 'Adherence to guidelines', shifting practice towards compliance with guidelines may be seen as a consequence of defensive practice. Some participants also saw it as a motivator (Assing, Bradder, Broom, Robertson, Wier). Particularly in Assing Hvidt et al.'s study, overly restrictive guidelines were felt to be a motivator of unnecessary referrals, over-treatment and over-documentation.

> Explaining at length in the patient record why they had chosen not to follow an established guideline and clearly documenting the circumstances for not doing so was considered a defensive practice since it was driven by fear of being blamed for deviation from government-approved 'best practices'. At other times, guidelines were applied by the GPs even when they were thought not to fit with a particular patient for the sole reason of meeting treatment protocols and avoiding being blamed. (authors, Assing)

Strict adherence to guidelines may also itself be a form of defensive practice in that it is thought to reduce the risk of litigation. Some participants see guidelines as helpful in managing exposure to risk, in that they provide a way for individual clinicians to justify decisions. In some cases, this is a pragmatic judgement, while in others it seems to be a more emotionally driven sense that guidelines provide a clear landmark in a landscape of troubling ambiguity.

> And also I think, sort of, there is a tendency to think that medico-legally if you stuck to the guidelines you'd be defensible. Whether that's true or not, I don't know. But there's a feeling that a guideline is there to help you: to hold your hand as it were. (participant, Bradder)

> I think that in a lot of ways they protect one. If as a doctor you follow the guidelines of the unit in which you work to the letter, it's then very difficult for someone to say that you did the wrong thing. (participant, Bradder)

A linked topic is the use of metrics or scoring systems to assess clinician performance. While no studies examined such systems in detail, several participants in one study

mentioned the "fear [...] of your statistics, of your numbers looking good or numbers looking bad" (participant, Broom) as a potential motivator for defensive practice (in this case over-prescription of antibiotics).

> I mean nowadays, people keep trying to push for public listings of particular numbers ... like, success rates of operations or infection rates, or whatever. All that comes into play. You have to protect yourself as much as you have to protect your patients, right? (participant, Broom)

3.5.4 Adverse patient events

While this review did not set out to locate data on perceptions of adverse events, it proves to be difficult to separate from defensive practice in the strict sense. Clinicians reflecting on the broader themes of risk and accountability often emphasise the fear of adverse events over that of litigation or complaints (Assing, Bradder, Broom, Hindley, Ruston). This suggests that defensive practice is bound up with a broader sense of caution in clinical decision-making, which itself may be seen as appropriate or excessive (and as motivated by concern for patient welfare or for the clinician's own reputation). While some participants identify litigation fear as something identifiably distinct from fear of harming the patient, for others the latter is the primary motivator of defensive practice and fear of litigation a secondary component.

> [Participant 1] Just overlooking something that has disastrous consequences for another human being – it does not even have to elicit a complaint, but just the risk of overlooking something, I mean that is terrible!
> [Participant 2] Yes, then I'd rather play it safe.
> [Participant 1] Yes, but this has nothing to do with the complaints!
> (participants, Assing)

> And I mean, I would say we are always cautious. I mean you're talking about potential terrible risks to patients; and so you do your damned best to avoid anything horrible happening to the patient. (participant, Bradder)

> For example, when asked what sort of breast symptoms he would normally consider managing himself this respondent was adamant that he would not risk his patients life by exercising his clinical judgement: None at all. I'm not risking someone's life on my clinical judgement. I may say that I think it's Fibroadaeoma but what if its not [*sic*]. (author / participant, Ruston)

3.5.5 Patient factors

Participants in nine studies argued that pressure from patients or families was a driver of defensive practice (Assing, Bradder, Broom, Cunningham, Hammer, Hindley, Hood, Ruston, Surtees). Again, while this was not an *a priori* focus of this review, it is difficult to understand defensive practice in the narrow sense without setting it in the context of other potential drivers of overtreatment. If nothing else, in most cases litigation or complaints will be driven by patient dissatisfaction, so some consideration

of the latter is an unavoidable component of defensive practice. Participants in several studies regarded patient demand as a driver of defensive practice in this sense. Some linked this to a broader social shift, whereby patients are more likely than previously to challenge medical authority and make specific demands for healthcare (see also section 4.4.3 on how this shift has become embodied in healthcare policy).

> [T]he shift in patient culture in relation to the macrophenomenon of consumerism was found to be reflected in various ways in the accounts of the GPs who talked about how they were acting defensively towards an increasingly empowered patient population. (author, Assing)

> All participating GPs talked about how they felt pressured to act defensively because of an increasing request from patients for medical examinations and referrals to specialists, leaving the GP with the impression that generally and compared with earlier, patients lack confidence in the clinical assessment of today's GPs. (author, Assing)

> I will often agree to tests or treatments if patients are demanding, although medically I feel these are not justified. (participant, Cunningham)

As well as this sense of a broad shift across the patient population as a whole, participants described making judgements about individual patients as to the likely risk of litigation or complaints. Again, the judgement of risk reflects a more global assessment of certain patients as excessively demanding. Socioeconomic or occupational groups are a common marker here, with teachers and lawyers singled out in two studies (Bradder, Hammer).

> Across groups the GPs agreed that the socioeconomically privileged patients constituted a particularly demanding patient category. (author, Assing)

> Schoolteachers are a bit nicer than medico-legal barristers. [Laughter]. That's the sort of a stereotype. But they are, sort of, reasonably well informed. Have trawled the Internet. Know what they want, but really haven't got a clue. (participant, Bradder)

> Patients described by several interviewees as "quibbling," unduly pressuring health care providers, or searching for fault were reported to make up only a very small fraction of their patients, defined in terms of psychological profile or particular occupations, such as nurses, legal experts or school teachers. (author, Hammer)

These judgements also reflect a sense of patients' individual psychological temperament. First impressions may play a significant role, as managing risk requires clinicians to make judgements about the likelihood of problems at an early stage in the patient relationship.

> I referred her because of her general anxiety and because I didn't know the type of person she is. If she were someone that I'd known for sometime I would be able to gauge whether I could take the chance of managing her myself initially before a referral. As I didn't know her very well I wasn't prepared to take any chances. (participant, Ruston)

Participants in Ruston's study, which focuses on GPs' referral decisions for women with breast problems, suggest that there is considerable nuance in these decisions. Some described cases of referrals which were straightforwardly defensive, in that they were mainly driven by patient pressure and threats of litigation, while others suggested that patient anxiety may be a legitimate reason for a referral, regardless of whether the clinician feels it is well-founded. While the two kinds of case are experienced very differently by clinicians, they may not be easy to distinguish in practice. As with previous themes, reasonable caution – manifest here as a concern for patients' mental wellbeing as well as their physical health – may not be clearly distinguished from the fear of litigation.

> There are some who get referred for litigation reasons. Someone who comes in and says 'I want a referral to the breast clinic' these are people who often end up being referred because you are scared to say no. Which you know if anything turns out to be wrong they are going to wipe the floor with you. (participant, Ruston)

> Sometimes patient anxiety can always precipitate a referral. But if they are so anxious about it and don't get reassured from what we say then I feel that I am justified to make a referral anyway. (participant, Ruston)

It should be noted that, in general, patient factors were a relatively minor theme across the studies. Participants in Hammer's study noted that only "a very small fraction of their patients" were excessively demanding (author, Hammer, cited above), and several argued that clinicians' relationships with patients were more important than the patient's expectations or personality, and suggested that the risk of complaints or litigation was best managed by more effective communication.

> Admitting one's mistakes, demonstrating honesty, or even showing empathy were seen as the best means of "neutralising" the risk of a complaint or "keeping it at a distance." As a result, the obstetrician-gynaecologists in our sample considered the risk of malpractice claims above all as a matter of bad interaction or of misunderstandings between health professionals and lay people, instead of the expression of patient's litigious ethos. (author, Hammer)

Participants in other studies were more ambivalent on this point, seeing the key issue as a lack of trust within the clinician-patient relationship. This is partly driven by patient factors such as those mentioned above, but also emerges over time within the clinician-patient dyad. The quote from Surtees et al.'s study below reflects the intuitive

nature of these judgements, and the way that subtle shifts in the relationship can precipitate a move towards defensive practice.

> You have no choice sometimes but to do defensive practice and that may be because sometimes there are clients who, really as the partnership evolves, that really you realize you're not that well suited to them, that they don't actually … I think the strong word is trust. They don't really really trust you and you get that sense that you feel vulnerable. And you have this slight feeling of a vague unease, and you would practice defensively, you would send them for a blood test, or you would do a CTG, at every point where you think oh I'd better do that, better get the scans, I just need to cover myself. (participant, Surtees)

3.5.6 Social factors

As well as individual patients, broader social factors enter into clinician-patient relationships in a way which may provoke defensive practice (Assing, Bradder, Hammer, Robertson, Spendlove, Surtees). This may take several forms. One is a sense among clinicians that society at large has too low a tolerance for risk (in general, or risk of specific adverse outcomes), or that social norms promote unrealistic expectations of treatment outcomes. In many cases participants identified a change over time, whereby patients and society at large had become less risk-tolerant. This theme also reflects a sense that patients, their families and the public more generally have unrealistic expectations of treatment, such that any adverse event is regarded as intolerable.

> So we are asked to be very defensive, not to defend, or not to protect ourselves, but because society has decided that we cannot live with the teeny-weeny risk that somebody calls the doctor and is told to take a pain killer and it turns out that they have a brain tumor or something, and I think that with this decision we shoot completely above the target! (participant, Assing)

> Several interviewees pointed out a growing tendency of patients to control aspects of life previously understood as uncontrollable – such as a pregnancy and healthy birth on demand. Therefore, medical complications or any unintended event would have become less and less tolerated nowadays by patients. (author, Hammer)

> You know, people now think it's their absolute right to have everything … that's just the way it is. (participant, Spendlove)

> [Y]ou're very careful with dotting your i's and crossing your t's … because this is the world where everybody expects the best. Everybody expects the perfect baby … and perfect labour … and so you have to protect yourself. (participant, Surtees)

Partly because of these unrealistic expectations, negative events are regarded not as inevitable and acceptable risks but as fundamental failures. As such, any negative event must be the outcome of a mistake by an identifiable individual. This set of perceptions is identified by participants as a "blame culture" (Hammer, Robertson, Spendlove).

> ... I think we are very much a blame culture. We do look for blame. (participant, Robertson)

> We're in that society, that culture at the moment where somebody is always looking to blame ... there's always a scapegoat ... and it's sad that it's like that ... risk is dictating everything we do in maternity. (participant, Spendlove)

The sources of these shifts in norms were not explored in depth in the studies, being seen rather as byproducts of a broader set of social changes. One factor which was identified as a driver of excessive patient demand was inaccurate and alarmist reporting of healthcare issues by the media.

> Several GPs pointed out that although increase in health education is generally a positive development, the health warnings communicated through the media, sometimes based on dubious scientific evidence, result in patients becoming increasingly fearful and anxious about risk factors and alarm symptoms, motivating them to request for specific tests and examinations. (author, Assing)

Participants saw the media as fostering a generalised suspicion of clinicians by focusing disproportionately on adverse events and expressed a fear of negative media coverage. Both were seen to contribute to a lack of trust in individual patient relationships which, as mentioned in the previous section, may be an important driver of defensive practice.

> ... there is certainly a culture of doctor bashing. You know everyday ... I open the paper, and it's so depressing to read, like as a ... doctor; because you think, you know, I'm trying my best here. [...] A case may be hyped-up in the media and it makes everyone ... that bit more suspicious of doctors; [...] And they're just looking for your faults right the way through. And I think you practise differently in that environment. (participant, Bradder)

Relatively few participants identified specific aspects of the legislative or policy context as potential drivers of defensive practice. In two studies, one from Denmark and one from Australia (Assing, Broom) participants argued that private health insurance may be a motivator: in the Australian study participants argued that clinicians may overtreat as they have a financial incentive to reduce readmission for private patients (Broom), while in the Danish study private health insurance companies were seen to apply more pressure in referring patients for tests (Assing). In one study from Switzerland, participants identified caps on compensation and

regulation on legal fees as limiting clinicians' litigation risk, and hence reducing defensive practice (Hammer).

More broadly, in two studies litigation risk and hence defensive practice were seen as specifically USA problems, and increases in litigation risk for clinicians seen as part of a more general "Americanisation" (Hammer, Surtees).

> [W]e're becoming very, very Americanised, in that you can be sued for sneezing in the wrong place and it's starting to happen here and I guess most of us are aware of the fact that somebody can take you to court for the slightest little thing [...] (participant, Surtees)

3.6 Impacts of defensive medicine

3.6.1 Professionalism and autonomy

A frequent theme across the studies was that defensive practice undermined clinicians' professional judgement and their autonomy (Assing, Bradder, Broom, Cunningham, Hammer, Hood, Papadopoulos, Robertson, Spendlove, Wier). On a personal level, this was felt to reduce job satisfaction and increase the likelihood of burnout. The dissonance involved in making decisions which are thought to be clinically sub-optimal contributes to the mental strain involved in defensive practice (see further 'Emotional impacts' below). Participants also expressed a sense that their hard-won clinical skills and judgement were being made irrelevant because decisions about care were being driven by extraneous factors.

> [T]here's something that can undermine the joy in going to work, it's if we become like a referral office. So, it's not an economic argument that makes us say, 'Damned no, we won't refer this patient for an MRI scan' ... it has more to do with our professionalism telling us not to do it. And I think that if an action obviously seems against any medical common sense then I think that one will experience more annoyance and burnout in the job than if one refuses to act defensively... (participant, Assing)

> [T]aking away people's autonomy does nothing for people's work ethics and satisfaction and trying to get the best for the patient. (participant, Broom)

> [One participant] explained that very little of the care involves using clinical judgment and skills because it is all based on avoiding litigation. (author, Papadopoulos)

However, while this theme emerged as part of the discussion of defensive practice, participants mostly linked it not to litigation risk but rather to the increasing burden of administrative protocols and/or clinical guidelines which limit the individual clinician's freedom of action. Initiatives to improve accountability and the quality of care were widely seen as an erosion of clinical authority, reflecting a more general cultural shift away from automatic respect for the clinician's role and professional

judgement. In other words, while the loss of autonomy was seen to come about both through regulatory systems and through the more specific threat of litigation, clinicians' understanding of this theme was largely determined by the former. Such regulatory pressures were seen as more of a practical day-to-day issue, compared with the rather abstract possibility of litigation, and as resonating with broader shifts in the clinician's role.

> The experience among several of the GPs was that the obligation to comply with and implement clinical guidelines and refer patients to fast-track packages was undermining the individual GP's clinical assessment and professionalism: "Society dictates that we must act on specific symptoms in such a way that we actually put aside our own professionalism ... and so our professionalism is not in great demand any longer." (author/participant, Assing)

> It makes you try to make an art into a science. But there can be five or six ways of doing the same thing, and one isn't particularly worse than the other. But by introducing the protocols and which is obviously, you know, good for cutting down litigation ... it just stifles autonomy. (participant, Bradder)

> Along with the bureaucratic burden, a growing body of legal rules and recommendations bearing on medical work was felt to be a latent societal distrust towards professional skills and their ability to act in the patient's best interest: "Ultimately, this is what has changed, society does no longer trust doctor's common sense." (author/participant, Hammer)

As discussed elsewhere ('Documentation' above and 'Communication and relationships' below), bureaucratic demands for over-documentation were felt to impair positive relationships with patients, which also contributes to a sense of frustration and reduced job satisfaction.

> I actually think that it affects my job satisfaction, just the feeling of paralysis from time to time, because you are just not given enough space to do what you would really like to do, such as talking to the patients without having to document a whole lot afterwards. (participant, Assing)

While these views were expressed by a range of clinicians (the quotes above all come from studies of doctors), midwives expressed this view particularly strongly, and linked it to specific institutional changes and patterns of care in a way which is less apparent in studies of other clinicians. Midwives identified an erosion of their professional role as part of a more general dynamic of medicalisation of birth, and saw this as partly driven by defensive practice, both in the sense of minimising litigation risk and in this broader sense of guideline-driven care. In particular, defensive practice was seen to involve a shift of clinical authority from midwives to obstetricians, and greater involvement of doctors in cases which at one time would have been managed by midwives.

> We don't practice as autonomously as we used to, and there's a lot of doctor input now into management of women because of litigation, that's my perception. (participant, Hood)

> Well I do wonder if it [risk] will affect professional roles more, as changing roles is going on already now. We're already in litigation ages, we are so aware of litigation and the risks in childbirth … and we are becoming more defensive because of it … it is bound to affect role boundaries in some way. (participant, Spendlove)

The theme of medicalisation also involved a range of perceived negative changes such as an increasing reliance on medical technologies and an overemphasis on risk to the detriment of supportive care. Such changes to care were linked to shifting role boundaries in a way which, for some participants, had severe impacts both for midwives and women giving birth. Particularly in the studies by Hood and Spendlove, midwives described ongoing conflict with doctors and a sense of disempowerment which was detrimental for their sense of their own role and ability to deliver optimal care.

> Several gave examples where they felt powerless to stop medical intervention, and viewed what was occurring as extremely 'traumatic' to the woman and themselves. The escalating nature of childbirth intervention, considered to be the 'de-sanctification' of the birthing process and a result of defensive practice, left some feeling 'frustrated', 'powerless' and 'physically and mentally exhausted'. (author, Hood)

> We [midwives] are also more defensive practitioners, there's more medicalisation in the way that we practice because we are afraid too. Any deviation from the norm, we don't kind of think laterally any more, and think, well it could be because of this, so we're straight in there as well because we're afraid that if something happens, they'll say, well you should have done this … you should have done that … so we change the way we practice … (participant, Spendlove)

Participants saw medicalisation and the associated deskilling of midwives not as a spontaneous response to litigation risk but as mediated by professional bodies and individual institutions. Guidelines and policies which stipulate a single correct set of procedures were seen to reinforce both the dominance of doctor-led treatment and the broader medical paradigm, thus increasing litigation risk for midwives who do not practice in accordance with this model of care.

> We've been sucked into a biomedical model of care, we're frightened to practice any other way. Autonomy has gone … we are fed by CNST [Clinical Negligence Scheme for Trusts] … We're fed by Trust policies. We are like a conveyor belt of semi-professionals … (participant, Spendlove)

> Because if you come up to Nursing Council and they say why didn't you put this woman on the CTG machine, because that's the medical way to do it. That's deemed to be the correct way. (participant, Surtees)

3.6.2 Impacts on patient care

Participants identified several types of impact on patient care (Assing, Bradder, Cunningham, Hammer, Hood, Papadopoulos, Robertson, Spendlove, Surtees, Symon, Wier). Defensive practice may lead clinicians to undertake unnecessary treatments or diagnostic tests, which may cause harm to patients and excess costs to the healthcare system (Assing, Cunningham, Hood, Spendlove, Surtees, Symon). Again, studies of midwives particularly linked this to a harmful medicalisation of birth and an overemphasis on aggressive management of birth problems (Hood, Surtees, Symon).

> I think I actually expose kids to risk more. [...] I will [...] put kids through painful and potentially risky procedures in order to satisfy parental concern. (participant, Cunningham)

> [B]eing defensive is not just writing a letter to be defensive, it changes care and that costs money ... (participant, Spendlove)

Participants in Assing's study noted particularly that higher-socioeconomic-status patients were more likely to "put their foot down and demand to be given this or that" (participant, Assing), suggesting that defensive practice might exacerbate health inequalities, since patients presenting a higher litigation risk were likely to be less in need.

Participants also noted that defensive concerns diverted clinicians into spending time and effort on formal procedures, which meant less time and energy available to deliver patient care (Hammer, Robertson, Spendlove, Wier).

> We spend more time with administrative things than really taking care of patients, just to justify and prove that we do our job properly [.] (participant, Hammer)

> Risk management is actually stopping us caring. You know, I've seen it first-hand where a newly qualified midwife was concentrating so much on filling her paperwork in that she forgot there's a woman there she needs to care for. (participant, Spendlove)

Some participants rejected the idea that they practiced defensively for precisely this reason, that doing so would be a barrier to their relationships with their patients.

> I don't think you could work if you, if that was the first, if that was foremost in your mind, I think you would be so stilted and so false with women and their families, I think you would be a dreadful midwife. (participant, Robertson)

Several participants also noted that concerns about litigation or complaints had made them more likely to avoid certain patients or areas of care (Cunningham, Hood, Papadopoulos, Robertson, Surtees, Wier). Participants in Cunningham's study mentioned several areas as potentially high-risk, including obstetrics, intensive care, drug addiction and sexual abuse (Cunningham); more generally, patients in challenging situations or with complex needs were seen to be risky (Wier). Some participants also mentioned that they avoided rural or less well-equipped clinical settings, due to the greater potential for adverse outcomes (Cunningham, Surtees). Midwives in Hood's study of midwives mentioned a wide range of strategies to reduce risk, including focusing on antenatal or postnatal care rather than delivery, moving to administrative or research roles, moving to night shifts and avoiding co-ordination responsibilities (Hood).

> I stopped seeing children who had been sexually abused over that time, and it left an absolute sour taste in my mouth in relation to continuing to look after children with that issue. I haven't assessed children with those issues since. (participant, Cunningham)

> I would never ever coordinate now. There is just too much to keep your eye on ... with this type of situation you just couldn't pay me enough to do it now. (participant, Hood)

Some participants also noted that they avoided specific patients whom they judged to be "unreliable" (participant, Papadopoulos) or likely to engage in litigation (Cunningham, Papadopoulos).

> Respondents indicated actively attempting to identify likely complainants, based on their sense (and that of their staff) of the quality of the doctor-patient relationship. Having identified such patients, they tried to minimise their responsibility for patient care by referral, or if this was not possible, by over-investigation, over-documentation, or over-consenting. (author, Cunningham)

3.6.3 Communication and relationships

Participants' views of the impacts of defensive practice on clinicians' communication and relationships with their patients were largely negative (Assing, Cunningham, Hammer, Hood, Papadopoulos, Robertson, Symon). Participants in several studies emphasised that defensive practice made them less able to communicate with patients, because minimising risk takes priority over engaging empathetically with patients' needs. One participant reported being unwilling to negotiate care with patients due to potential liability (Papadopoulos). Where clinicians constantly have the possibility of litigation in the backs of their minds, they cannot focus fully on meeting patients' needs and the broader relationship suffers from the intrusion of this adversarial dimension.

> I actually think that if it turns out that we end up being more defensive than empathic doctors who are close to the patient, then the relationship between the doctor and the patient breaks down ... because it's not for the patient's sake, it's actually in order to cover our own backs, so it's a safety valve so that we do not get blamed. (participant, Assing)

> [My relationship with patients changed] from one of focusing on caring for them physically and emotionally, to always seeing them as a potential adversary. (participant, Papadopoulos)

> One physician [...] reported being unable to become close to patients because of the constant awareness of liability. (author, Papadopoulos)

Participants emphasised trust as the core of an effective clinician-patient relationship and argued that defensive practice undermined this trust. Studies of midwives emphasised that their role as advocates for women was dependent on a trusting relationship which was more difficult to maintain under the threat of liability (Hood, Robertson). Hammer's study of obstetrician-gynaecologists also emphasised this theme, although the focus here was less on individual clinicians' responses to litigation risk, and more on institutional or regulatory strategies, such as consent forms or rules around documentation (Hammer).

> Indeed, these interviewees described the use of consent forms as distorting the essence of medical practice based on trust and close relationship: "It's a dehumanisation of the contact you have with your clients, with people who trust you" [...]. Another interviewee, who referred to his own "attitude of trust in patients" as opposed to "colleagues who document everything," criticized "an evolution that doesn't move towards a better doctor-patient relationship (...) in this way, one doesn't necessarily do good medicine". (author/participants, Hammer)

More specifically, defensive practice may lead to an overemphasis on risks and harms in communicating with patients, which can cause needless anxiety and may paradoxically impair patients' ability to make an informed choice (Assing, Hammer).

On the other hand, some positive views of the impacts on communication were also expressed. A few participants mentioned that attending to the risk of litigation or complaints had improved communication with patients, for example by encouraging reflection on practice or going to greater lengths to inform patients and secure consent (Cunningham, Symon). However, participants also noted that such strategies are time-consuming and may be difficult to implement in practice (Cunningham).

3.6.4 Adherence to guidelines

One specific impact on practice which forms a distinct sub-theme is the tendency for defensive concerns to motivate increased adherence to clinical guidelines or quality

standards (Cunningham, Hammer, Hood, Robertson, Spendlove, Surtees, Symon). As described above ('Guidelines and metrics'), this was seen by some participants as a driver of defensive practice, but in other contexts was explicitly described as arising from an increased concern with litigation risk. Institutional policies and hierarchies may particularly emphasise adherence to guidelines as a means to manage risk.

> The acceptance of the medico-legal feature of medical work by hospital practitioners was also often related to the emphasis put by the head physician on the importance of carefully following guidelines and paying attention to medico-legal issues: "it's strongly expressed by my boss, all the same we've been conditioned all the time, so is it the fear of complaint? yes, of course, but it's also the desire to do well." (author/participant, Hammer)

Clinicians themselves also reported valuing guidelines and protocols to manage their own individual exposure to litigation risk. Midwives in the study by Hood et al. described adherence to guidelines as a "safety net" which made them feel "more secure" and reduced "friction" between midwives and doctors (participants, Hood). At the same time, participants in several studies saw guideline-driven treatment as in opposition to individualised, responsive care, and as leading to overtreatment. Sticking strictly to guidelines may provide greater confidence regarding risk, but it also removes the ability to respond to aspects of patients' situations which are not envisaged in the guidelines, and leads to seeing the patient encounter more generally as an impersonal, rigidly structured process. As described above ('Professionalism and autonomy'), this dynamic is also a dimension of the limitation of professional autonomy, with consequent negative impacts on care.

> To avoid that, you become more mechanistic, more stuck to protocol – you're also less likely to establish a therapeutic relationship. (participant, Cunningham)

> I think because of litigation you tend to go with the hospital policy and I never wanted to put somebody on a monitor for half an hour but I always did, for the half hour admission trace. (participant, Hindley)

> It's been a retrograde step, yeah we're bound by protocol ... definitely I don't think it's been a good thing. (participant, Hood)

> [Litigation] probably means you're practising more defensively, where before you could treat people as individuals and adapt your practice to suit the individual ... now there maybe is a tendency to control from a policy document. (participant, Symon)

One participant also suggested that the limitation of professional autonomy leads to a lack of ability to reflect on clinical practice, which could be a barrier to evidence-based care.

> ... like why is it done?' 'Oh, because that's the protocol', you know I find that a number of core midwives don't assess practice on the basis of the evidence; they make their decisions and do their practice on the basis of the protocols of the institution ... and sometimes there's quite a big difference between the two. (participant, Surtees)

In some cases, the impact of defensive practice may be more complex than simply motivating stricter application of the guidelines, and some clinicians' attitudes may be more flexible than the quotes above suggest. Some participants in Bradder's study suggested that clinicians may resist the drive towards defensive practice and protocol-driven care to the extent of falsifying documentation.

> In reality, because they're aware that if, just for example, in obstetrics you sometimes get a sense a baby is going to be deliverable vaginally. But along the strict letter of the guidelines of the law you shouldn't try. You should do a caesarean. So I know that people will falsify what they found on vaginal examination to make it acceptable to do the vaginal delivery, which they've got a sense they can do ... as people get more senior they feel that they should have a little bit more flexibility to use their experience. (participant, Bradder)

Another participant described how prioritising patient choice over guidelines is possible, but requires clearer communication with patients to reduce ambiguity.

> I think I have got better that if a woman wants to do something that is kind of outside our guidelines or our policies, supporting her in that but being very clear both in my verbal conversation with her and what I am writing that while this is what she wants, this is what are our guidelines and she appreciates, and I never did used to do that. (participant, Robertson)

Thus, guidelines are seen to impose clear demarcations on the "grey area" of clinical judgement (participants, Bradder, Hood) and to provide an explicit, formalised structure for clinical decision-making. Defensive practice may lead to better adherence to guidelines to reduce ambiguity and the responsibility of individual clinicians for adverse events. While in some respects this is a positive development, it is widely seen negatively, and linked to the other adverse cultural factors which are bound up with defensive practice: overtreatment and over-monitoring; a 'tick-box' culture which values documentation and consistency over trust and empathy in the clinical relationship; and the de-skilling of clinicians and loss of professional autonomy.

3.6.5 Emotional impacts

Many participants described negative emotional impacts because of defensive practice (Assing, Bradder, Hood, Papadopoulos, Robertson, Spendlove). Making decisions they felt were not clinically well-grounded led to feelings of guilt and regret. This was often linked to the loss of professional autonomy ('Professionalism and autonomy' above), which is not merely apprehended intellectually but often felt as a serious blow to the

individual's sense of self. While some participants suggested that defensive practice may reduce anxiety about litigation, albeit at the cost of reduced job satisfaction (Papadopoulos), others suggested that a culture of defensive practice itself produced chronic anxiety and frustration.

> I think it's a great shame. I become very critical of myself. I mean, I get angry with myself and frustrated ... I mean, it's really defensive and bad doctoring, really! (participant, Assing)

> I even get a stomach ache if I feel that I have acted defensively and made a referral that is not medically indicated, or even chest pain. So, it really does something to me! (participant, Assing)

> It runs through your mind continuously and you're thinking when's the axe going to fall, when's the lawyer going to ring, and also questioning what you're doing, what you could have done. (participant, Hood)

Institutional policies designed to clarify responsibility could exacerbate these emotional impacts.

> We've got to that point now where individuals are asked to sign to say we've read guidelines and policies [...] and if they're still involved in an incident ... they're going to be disciplined for it [...]. So people are frightened ...We're really frightened about that. (participant, Spendlove)

As already noted, studies of midwives particularly emphasised the sense of moral injury and complicity with traumatic overtreatment, which was exacerbated by chronic conflict between midwives and doctors (Hood). Participants described defensive practice as resulting in a pervasive sense of guilt which had serious ongoing emotional impacts.

> Engaging in defensive strategies to maintain boundaries also left some midwives feeling 'guilty' and questioning their role. One midwife used the word 'ashamed' to describe how she felt about practising defensively. She went on to say: 'I've never wanted to practise this way, but this [fear of litigation] really pushed it to that point'. [...] Others described feeling 'overwhelmed', 'undervalued', 'exhausted'[.] (author/participants, Hood)

Participants with experience of litigation found that the experience undermined their confidence in their ability to practice effectively. This loss of confidence may also be a driver of defensive practice, suggesting a vicious circle, where a culture which makes clinicians less confident leads to overly cautious treatment decisions.

> I felt quite isolated and you do worry that you know, well you think deep down are my colleagues thinking I am incompetent. Am I incompetent? Am I incompetent but I just don't realise it? (participant, Robertson)

4 SYSTEMS-BASED LOGIC MODEL RESULTS

4.1 What is the range of possible drivers of defensive practice?

As noted in the 'motivations' section in Chapter 3, the QES examined factors identified by clinicians as driving defensive practice, noting that defensive practice is likely driven by a range of factors beyond direct experience. In this section we draw on a broader range of literature to identify drivers that are less tangible and not directly experienced or observed by healthcare workers. To identify possible drivers, we drew on three types of source: non-empirical or theoretical literature; non-empirical evidence from research studies (i.e. author discussion and reflections); and quantitative empirical evidence from clinicians (n=23 papers in total). As described in section 2.3.3 the analysis was guided by Bronfenbrenner's 1979 Social Ecological Framework to help us focus on the institutional or 'exosystem' drivers and cultural or 'macrosystem' drivers.

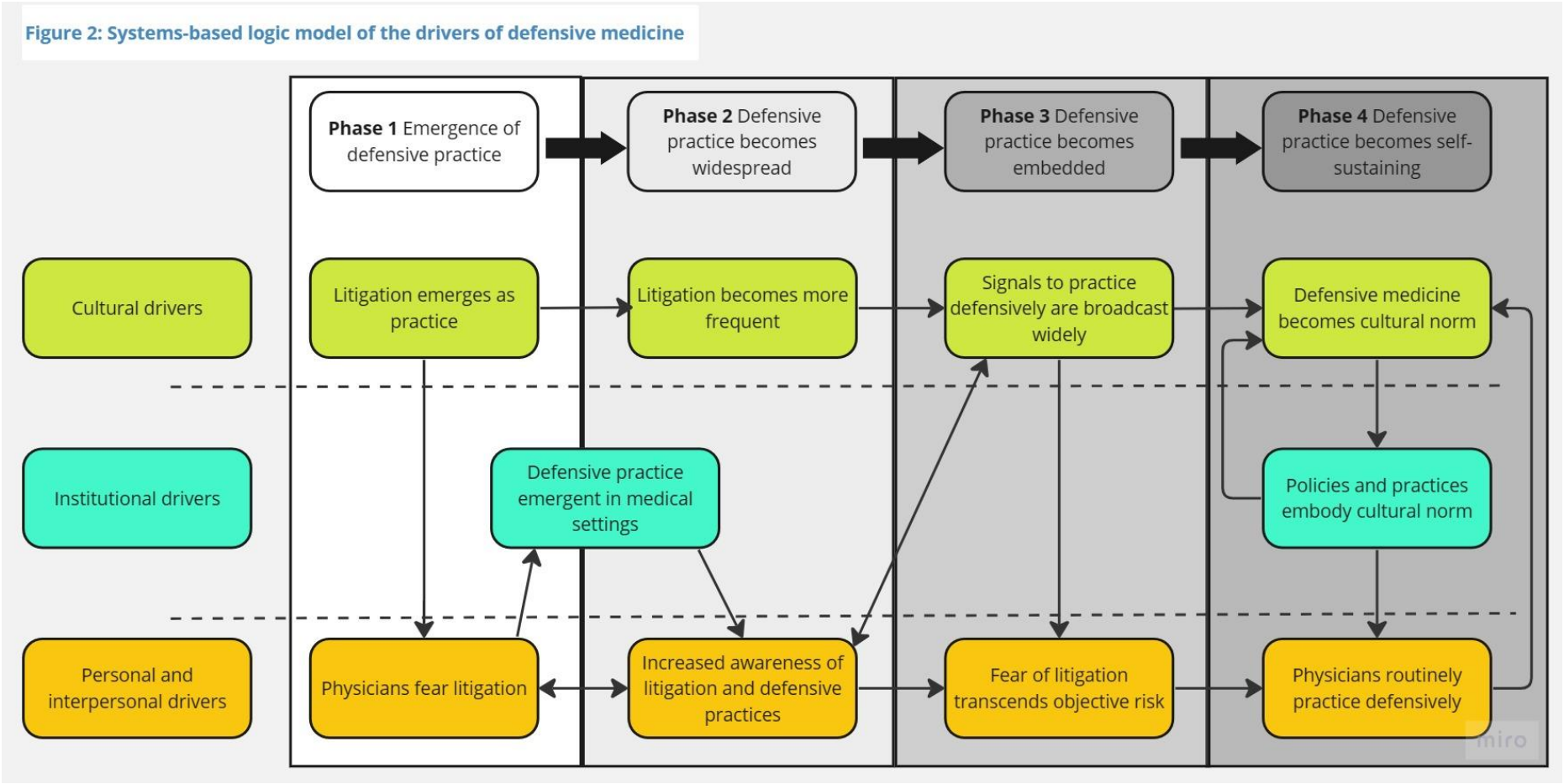
Drawing on the QES and logic-model analysis, figure 2 below illustrates the development of defensive practice towards a self-sustaining phenomenon, driven by a range of factors at different socio-ecological levels. Both the analysis for the systems-based logic model and the QES identify that whilst defensive practice may have been initially driven by a rational fear of litigation, it appears that over time the fear of litigation has transcended the objective risk of litigation. This is illustrated in phases 1-3 of figure 2 and described in the narrative in section 4.2. Evidence from both pieces of work also suggests that the widespread fear of litigation and common awareness of the phenomenon means that defensive practice has developed into a cultural norm. This normalisation has evolved to such an extent that key institutional practices and policies reflect, and thereby further entrench, defensive practice as a cultural norm. Defensive practice no longer appears to be driven by either an objective or irrational fear of litigation at the micro-system level, but driven instead by an interwoven network of widely-held cultural ideas (macrosystem) and by the embodiment of these ideas in institutional policies and practices (exosystem). This is illustrated in in Phase 4 in figure 2, and described below in sections 4.3 and 4.4.

Whilst it is not possible to depict the full complexity of interactions between factors that led to defensive practice becoming a self-reinforcing phenomenon, the different coloured rows in Figure 2 aim to illustrate how factors at all social ecological levels, including at the micro-, meso-, exo- and macro-system, have contributed. The narrative in section 4.5 illustrates some interconnections between factors at different levels to indicate the complex interactions. However, it should be noted that given that the analysis for the model is based in part on logic and theory, it may not be comprehensive; there may be other factors or interactions that we have not captured and certainly more complexity than is possible to communicate in either the figure or the narrative.

Setting out the complexity of this interwoven network of drivers in the graphical representation of the systems-based logic model, provides a potentially useful starting point for considering how to intervene to address the problem of defensive practice. In particular, by illustrating that the interacting drivers span different social-ecological levels, the model supports consideration of possible or likely factors that might facilitate or hinder any policies or practices designed to tackle the problem. For example, multi-pronged policies and practices may be needed to simultaneously tackle drivers at the personal, institutional and cultural levels as any interventions delivered at a single level risk being undermined by drivers at other levels.

The last section of this chapter (4.6) documents the high-level of concordance between the independently conducted QES and the analysis for the logic model.

Figure 2: Systems-based logic model of the drivers of defensive medicine



4.2 Defensive practice is driven by experiences of litigation but only up to a point

Defensive practice certainly appears to be driven to some degree by experiences of litigation or other legal risks. The QES has established personal experience of negative legal experiences as a driver (see section 3.5.1) but also found that defensive practice often had less to do with fear of litigation than with broader shifts in clinical practice and regulation (section 3.4.1). The findings of other types of study, identified through the process of developing the logic model, reiterate that risk of litigation may not be the sole driver of defensive practice.

Quantitative analyses from the USA indicate that the likelihood of negative legal experiences is high for physicians in that country. Claims data from 1991 to 2005 indicates that between 75% and 99% of doctors would face a malpractice claim at some point in their lifetime, depending on the level of risk associated with their speciality (Jena et al., 2011). USA litigation rates have remained relatively constant since the 1980s, with possibly a slight downward trend (Antoci et al., 2021).

However, writing in 2017, Berlin noted that defensive practice might be expected to have decreased in USA states where malpractice lawsuits have reduced in number, and that this does not appear to have happened (Berlin, 2017). Furthermore, studies of the influence of malpractice risk have not always found an association between actual liability levels and defensive practices. Studdert et al. (2005) found that the levels of defensive practice among USA physicians working in the high-risk specialisms of emergency medicine, general surgery, orthopaedic surgery, neurosurgery, obstetrics/gynaecology, or radiology were not found to increase in line with objective measures of their liability experience or exposure.

Indeed, studies have identified practice areas where fear of litigation appears far greater than can be explained by objective risk alone. For example, an international survey of defensive behaviours among specialists in infectious diseases and clinical microbiology found that only 0.4% had experience of any kind of condemnation for malpractice related to antibiotic prescription or advice, and yet over a quarter (28.6%) reported that they frequently worried about this (Tebano et al., 2018).

Furthermore, levels of defensive practice are also a concern in countries with very different legal and financial arrangements around malpractice. High rates of defensive practice are reported in both Belgium and the Netherlands, despite both instigating no-fault compensation schemes which remove the need for litigation (Mullen et al., 2008, Vandersteegen et al., 2017). Although this data derives from just two studies, it provides clear evidence that factors other than litigation risk must be driving defensive practice.

In the UK, NHS bodies hold financial responsibility for clinicians' negligence and the NHS is both defender and investigator when it comes to malpractice claims (Keane et

al., 2020). Defensive medicine has not been studied nearly as extensively in the UK as it has for the USA, but this spreading of risk from litigation across the health care system as a whole might be expected to reduce individual clinicians' concerns and defensive practices. Experience still looks to be influencing practice. For example, in a survey of doctors registered with the British Medical Association, 80% reported practising more defensively after a complaint (Bourne et al., 2016). However, one survey of hospital doctors found an estimated 78% to be practicing defensively, while fewer than one in five (one in three for consultants) had actual direct experience of litigation (Ortashi et al., 2013). While lower than in the USA, clinical litigation rates are on the rise in the UK with one study reporting a 100% increase in claims to NHS Trusts in the five years between 2008 and 2013 (Watson and Kottenhagen, 2018).

Since the above findings indicate that defensive practice is not necessarily predicated on direct experience of litigation or complaints, and since the QES mainly offers insight into clinicians' personal and interpersonal experiences relating to defensive practice, we looked for drivers described in the literature as operating at the 'exosystem' and 'macrosystem' levels to identify those that may be present but not directly experienced. Below, section 4.3 considers the cultural or 'macro-level' drivers of defensive practice described in the literature, and section 4.4 considers institutional or 'exosystem-level' drivers.

4.3 Defensive practices are also driven by cultural factors

The studies examined for the model indicated that a range of macro-level or cultural factors may drive defensive practice. Cultural drivers are indicated in the top row in green in the model in Figure 2.

4.3.1 Awareness of the phenomenon leads to 'collective anxiety'

The 2005 paper by Studdert et al., in seeking to explain their finding that liability experience and exposure were not associated with a propensity to practice defensively, quotes a 1996 paper by Glassmann and colleagues indicating that the phenomenon is much more widely recognised than by those directly affected by it:

> The signal to practice defensively may have been broadcast so widely that individual experience is overshadowed by collective anxiety. (Studdert et al., 2005, p.234)

More recently, some authors argue that the widely broadcast signal to act defensively, has resulted in clinicians overestimating the personal and professional risks of bad patient outcomes (Bodoh, 2019, Borgan et al., 2020). Thus, in addition to the actual risk, the narrative of defensive practice and personal risk appears to fuel the individual fear that drives defensive practice, thus helping it become a self-sustaining phenomenon that is independent of its origins.

4.3.2 Beliefs underpinning the legal system: blame

A second cultural-level factor identified as setting the pattern for defensive practice is the logic of individual blame that is characteristic of criminal law in Western societies (Catino and Celotti, 2009, p.4).

> The individual blame logic, oriented more towards the identification of a guilty individual as opposed to the key underlying circumstances that led to the error, may be considered to be among the major factors that have led to the spread of defensive medical practices in doctors. (Catino and Celotti, 2009, pp.12-13).

Catino and Celotti assert that the focus on identifying an individual to blame has arisen both because it is easier than identifying *'the hidden, organisational and managerial factors which are the product of collective actions taken over the course of time'* and because it is more emotionally satisfying; *'after a serious accident, or worse, a disaster, the identification of blame tends to satisfy the people involved and the public in general'* (p.4). The logic of individual blame is considered responsible for driving defensive practices because:

> The search for the guilty individual discourages the reporting of errors, making it difficult to learn from failures and promoting the spread of defensive behaviours (Catino and Celotti, 2009, p.13).

4.3.3 Ideological factors driving the medical system: Marketisation and consumerism

Other authors have noted that this focus on individuals within the law has also underpinned cultural changes in other areas of society that appear to be associated with defensive practice. Ellen Annandale (1996) observes that *'Sanctified by the individualistic model of the law [there is] a new mode of governmentality'* which she argues is characterised by the ethos of a market economy in which *'the citizen is best seen as a customer' (p.426)*. Drawing on experiences of nurses and midwives Annandale goes on to argue that governmental market ideology impacts directly on the medical system:

> The environment in which nurses and midwives work is certainly marked by the individualistic ethos of the market and, ultimately, it is this ethos that fosters the sense of risk that surrounds practice. (Annandale, 1996, p.448)

Annandale notes that nurses' experiences reflect wider societal changes as they *'bear witness to the shift in relations of authority from producer to consumer that many commentators have deemed characteristic of late modern society' (p.424)*. The study participants describe the consumerist ideology as driving a culture in the NHS, in which patients are increasingly perceived as *'risk generators'* (p. 422) and which is experienced as *'hav[ing] the effect of pitting patient and provider against each other'*

(p.427). Defensive practice, Annandale argues, has emerged as *'a self-protective strategy to cope with this pressure'* (p.417).

4.3.4 Philosophical underpinnings of medicine: The Biomedical model

A further cultural-level driver of defensive practice described in the literature comes in the form of widely-held assumptions about the nature of science and medicine. Cunningham and Wilson in their 2011 commentary on complaints, shame and defensive medicine consider the underlying rules and assumptions of modern medical practice, and how these beliefs are shared by both medicine and society. Focusing on the biomedical paradigm, they note that the often-unstated assumptions of biomedicine imply that identifiable truths about diseases can be discovered and that *'the correct attitude or 'stance' of the doctor is that of objective scientist'* (p.838). The authors assert that the implication of these assumptions is that given sufficient knowledge, doctors should almost always be able to make the 'correct' diagnosis or provide the 'correct' therapy which has in turn *'led to a black-or-white dichotomy between correct and incorrect medical practice'*. Cunningham and Wilson draw a direct link between this conception of medicine and defensive practice via the notion of shame:

> Because the underlying rules of biomedicine are based on 'external truths' about disease that doctors need to know, the possibility of judgement is always present [...] judging adverse outcomes by the rules of biomedicine will almost always find that the doctor has fallen short of the mark [...] and because a failure of judgement can be perceived by the doctor to be a failure of self, the practice of biomedicine can quite readily induce a shame response, with its potentially damaging outcomes. (Cunningham and Wilson, 2011, p.839)

They conclude that defensive practice is driven less by any external 'litigious' environment than by these internal responses arising from within the doctor.

Tebano et al. (2018), in their paper on defensive medicine among antibiotic stewards, argue that the biomedical paradigm drives not only these internal responses of doctors but a culture of blame, like that which is noted to drive the legal system as described in section 4.3.2. They argue that the *'diffuse cultural perception of modern medicine as a perfect science'* leads *'in the public, as well as in doctors, [to] an intolerance of error and a culture of blame'* (p.6). Like Cunnigham and Wilson, Tebano et al., also conclude that the biomedical philosophy underpinning medicine explains why fear and defensive behaviours are *'not necessarily bound to a real legal threat'* (p.6)

4.3.5 Defensive practice is so well established that the fear of litigation is no longer needed to drive it

Several authors go one step further, arguing that defensive practice is now entrenched, no longer requiring external cultural, personal or interpersonal drivers. For example, from their survey of defensive practices among gastroenterologists in Lombardy, Elli et al. (2013) conclude that defensive practice *'is deeply rooted'* (p.471) and an *'established way of thinking in the decision making process of gastroenterologists'* (p.472).

Similarly in their work on defensive practice in mental health in New Zealand, Mullen et al. (2008) found that it is *'widely perceived to be commonplace'*. Moreover, they conclude that *'claims that there is a climate of defensive practice may tend to be self-fulfilling'* (p.90).

These arguments suggest that defensive practice is not only *driven by* cultural factors, as well as personal experiences, but that defensive practice has become a *cultural norm* in and of itself. Below we consider how institutional-level drivers, in reflecting this cultural norm, further entrench the practice and normalisation of defensive practice.

4.4 Institutional factors entrench cultural drivers

Bronfenbrenner describes the 'major institutions of society' as encompassing, among other structures, the mass media, the world of work and agencies of government. The papers examined for the systems-based logic model highlighted how media, legal, and healthcare institutions have given a tangible or visible form to the cultural signal to practice defensively. This, in turn, has further amplified and entrenched defensive practice as a cultural norm, as illustrated in Figure 2.

4.4.1 Media drivers: cultural fascination with cases drives awareness

Several authors noted that media fascination with malpractice cases could contribute to defensive practices (Annandale, 1996, Calikoglu and Aras, 2020, Mullen et al., 2008). In her 1996 work on nurses' experiences of work following 1990s NHS reforms, Ellen Annandale observes that the risk culture motivated by the market ideology underpinning those reforms was also reflected in the media:

> The reassuring face of medicine of yester-year has been replaced by visions of institutional risk. Financial cut-backs, bungled operations and incompetent practice are now at the heart of television medical dramas and news reports. (Annandale, 1996, p.424)

Similarly, in their examination of mental health services in New Zealand, Mullen et al. (2008) observe that:

> Controversies in mental health, and occasional tragedies, are often the subject of close media attention and reporting which may be

> inflammatory. Negative public perception of the mental health service may influence practitioners' decision making and so contribute to defensive practice. (Mullen et al., 2008, p.86)

Some authors also noted other routes through which the media may drive defensive practice. Elli et al. (2013) conclude that *'continuous advertisement campaigns inviting patients to make malpractice claims'* underpin the tendency to practice defensively. Jani and Papanikitas (2018) assert that social media plays a significant part in this as it allows patients to compare relative care delivery.

4.4.2 Legal institution drivers: lawyers' 'opportunism' and the Bolam Principle

One feature of legal institutions that was noted to drive defensive practice was the opportunistic behaviour of lawyers, which is itself driven by systemic mechanisms for securing financial gains. Jani and Papanikitas (2018) assert that, whilst it should be recognised that all the key stakeholders in the healthcare system have had an important role to play in the establishment of defensive practice, lawyers will certainly play a role:

> The checks and balances provided by the legal system to ensure safer care have mutated into a system which often has opportunism at its core, leading to unnecessary lawsuits and unregulated damage awards, which has had the effect of making doctors practice medicine in a more defensive way to protect themselves. (Jani and Papanikitas, 2018, p.103).

In section 4.3.2 above, we considered how a *culture* of 'individual blame' underpins a legal system that drives defensive practice. Several studies suggest that, once defensive practice becomes an established way of thinking, specific *principles and practices* within the legal system will further entrench defensive practice (Mullen et al., 2008, Raposo, 2019, Ries, 2017). Mullen et al. (2008) consider the influence of the 'Bolam principle', i.e. that judgments on the acceptability or adequacy of care can be made based on *'whether or not an individual clinician's practice corresponds to prevailing local practice'* (p.89). Recognising that the Bolam Principle is accepted, to varying degrees, in the UK, New Zealand and USA, the authors assert that since the Bolam principle will tend to make clinicians behave as they believe other clinicians behave, and consequently that if defensive practice is the norm, less defensive practice will become '*correspondingly maverick and hard to justify*.'

4.4.3 Healthcare institution drivers: policies and practices enshrine defensive practice

A range of policies within healthcare institutions were also noted as enshrining or encouraging defensive practice. A key institutional policy described as promoting defensive practice is what Vento et al. (2018) term a 'hospitalist' model of healthcare delivery. Noting that, in the USA, 'family doctors largely do not take care of their

patients in a hospital close to home anymore', Vento et al. argue that modern healthcare delivery is characterised by a lack of patient face time and diminished doctor patient relationships; the inevitable consequence of which, they argue, is defensive practice.

A similar phenomenon is described for the UK in relation to the move to healthcare delivery through hospital trusts as part of the Community Care Act of 1990. Annandale's 1996 survey of 319 nurses found 19% identified the changing organisation of hospitals (particularly managerial changes) as responsible for their increased concern regarding their own legal accountability. Annandale observes that the new organisational context of the NHS had created a sense of *'unease'* among nurses conducive to defensive practice because *'"leaner and flatter" managerial structures'* mean less support from management, and because policies such as the use of performance indicators, output measurement and performance-related pay, place responsibility on individuals (p.428).

Also reflecting the cultural shift to a marketised model of healthcare (section 4.3.3), policies that position the patient as a consumer were a second type of healthcare institution mechanism noted for entrenching defensive practice. Annandale (1996) found the Patient's Charter, introduced in the UK in 1991, and which gave patients new rights to hold providers to account, had the effect of pitting patient and provider against each other. Annandale's survey findings identified patients/relatives growing awareness of their rights as *'the predominant factor by far'* underpinning nurses' concerns about legal accountability; with 65% of the 351 participants selecting this as the main reason for concern. Higher patient expectations were also identified as a driving factor in countries other than the UK (Calikoglu and Aras, 2020, Jani and Papanikitas, 2018, Ries, 2017).

Individualised blame, noted above to be a feature of both the legal (section 4.3.2), and medical system (4.3.3), also appears in embodied form within the policies of healthcare institutions.

In Elli et al.'s (2013) survey of Italian gastroenterologists, the authors concluded that these clinicians, '*including those who are "organisationally protected" and insured by their employer'*, still *'feel they are abandoned by their institutions'* (p.472). Similarly, Annandale's (1996) survey found that nurses and midwives stressed that *'errors and inaccuracies come back on the individual more'* (p.426) such that they *'conceive of individual accountability as a management tool'* (p.428).

Annandale notes that this focus on individual accountability within institutions is not merely a reflection of wider cultural values observed at the macro level (as described in sections 4.3.2 and 4.3.3 above), but is explicitly enshrined in codes of conduct within the NHS:

The UKCC's Assistant Registrar for Standards and Ethics explains that while previously, the [UKCC Code of Conduct UKCC Code of Conduct] only said that each nurse was accountable, 'the 1992 document explicitly says that "you are personally accountable" (Annandale 1996 p.426).

A fourth institutional policy noted for entrenching defensive practice was the nature of medical training which incorporates both a formal curriculum and an informal, interpersonal form of learning that takes place as trainee clinicians observe and work alongside faculty (O'Leary et al., 2012). In their survey of USA medical students' clinical and educational experiences with defensive medicine O'Leary and colleagues found that because of the prevalence of defensive practice among physicians, trainees observe and are informally taught to practice defensively.

> The medical students and residents who responded to our study reported frequently encountering defensive medicine and being often taught to take malpractice liability into consideration when making clinical decisions. (O'Leary et al., 2012, p.147).

This type of informal clinical training may also explain a key finding of a USA study of defensive practices within obstetrics, that variation in the rates of electronic foetal monitoring and caesarean section between hospitals and counties indicates a 'strong effect of peer influence' (Tussing and Wojtowycz, 1997).

4.5 Interconnections within and between the cultural and institutional levels

In the analysis above we consider distinct drivers of defensive practice at the cultural and institutional levels as reported in the literature. However, we also sought to identify which factors within and between the institutional and cultural levels may be interconnected.

We examined whether connected themes emerged across the different levels. One identifiable thread relates to the ideological shift towards a market-based model of healthcare identified as a driver of defensive practice at the cultural level (section 4.3.3). This ideological shift was, in turn, noted as being embodied in defensive-practice driving policies at the institutional level such as the Patient's Charter which formalised patient rights to complain (4.4.3).

In addition to relationships between the different levels, some evidence of interrelated factors within levels was also available. Annandale (1996) highlights how different factors at the institutional level, as described in section 4.4.3, may interact. She notes how in the UK a combination of institutional policy changes to both patient expectations (because of the Patient's Charter) and hospital organisation (as a result of moving to trusts) may have intensified the shift to defensive practice:

> The fact that some respondents referred to both patient awareness and the changing organisation of hospitals (particularly managerial changes) suggests that they may have a combined, perhaps even mutually reinforcing effect. (Annandale 1996 p422)

Moreover, Jani & Papanikitas note the potential for feedback loops. In their discussion of marketisation and defensive practice (see section 4.3.3) they suggest a reciprocal relationship between the two factors, in that defensive medicine can have considerable effects on the availability, demand and cost of healthcare, and so on market systems themselves. As the authors put it, *'Defensive medicine contributes to marketisation and marketisation contributes to defensive medicine'* (p.108).

These findings about interrelated factors, indicate the likely complexity of an interwoven network of drivers of defensive practice. In addition to these complexities, the analysis for the systems-based logic model revealed the evolution of a significant and embedded problem.

4.6 Cross-cutting themes between the systems-based logic model and the QES

As the QES and building of the systems-based logic model were conducted by two teams working independently, an opportunity arose to identify whether themes emerging from the QES were able to support or verify the logic model analysis. We examined whether the themes identified for the systems-based logic model were consistent with the QES findings.

It was anticipated that clinician experiences as highlighted in the QES would in many ways reflect their direct experiences of defensive practice, but their broader awareness of the phenomenon and their reflections on it clearly chimed with many of the findings arising from the systems-based logic model regarding cultural and institutional drivers.

An overarching theme identified in the QES and from the analysis for the systems-based logic model is that the risk of litigation is not, or at least is no longer, the sole driver of defensive practice.

As noted in section 3.4.1, an important QES finding was that *'Enacted understandings of defensive practice often had less to do with fear of litigation specifically than with broader shifts in clinical practice and regulation' (p.12)*. Also, the QES findings on experiences of litigation and complaints (section 3.5.1) indicate that '*The experience of complaints in isolation is not a sufficient condition for practicing defensively. Rather, clinician's reactions to the risk of complaints or litigation are influenced by a range of broader factors.'* (p.18).

Correspondingly, in building the systems-based logic model we identified evidence of practice areas where fear of litigation appears far greater than can be explained by

objective risk alone and countries where defensive practice is reported (Belgium and the Netherlands) despite having no-fault compensation schemes (p.35). Based on this evidence we concluded that defensive practice is not necessarily predicated on direct experience of litigation or complaints and that respectively it appears to have become a cultural norm, a norm which is further entrenched in institutional regulations (p.38).

In addition, we identified other cross-cutting findings about alternative drivers of defensive practice. In Table 3 below we outline key themes identified from building the systems-based logic model which indicate drivers of defensive practice beyond litigation risk and illustrate where similar findings were identified in the QES. The QES findings in Table 3 should be considered examples of concordance, further data illustrating similar themes as well as more nuanced understandings of these issues are available in the QES section.

We identified two areas of discordance between the two pieces of work. Whilst the findings from the systems-based logic model indicated both the marketisation of healthcare and features of the legal system as drivers of defensive practice, it was noted in the QES that relatively few studies considered the legislative or policy context as potential drivers of defensive practice, see Table 3 below for details. However, since the discord is in the form of gaps rather than contradictory evidence, this may be explained by the relative distance between clinicians and the phenomenon of legislative principles and practices, and by the intangibility of the phenomenon of a market ethos within healthcare.

Table 3: Cross-cutting findings from the QES and the systems-based logic model which indicate that risk of litigation is not the sole driver of defensive practice

Cross-cutting finding	Drivers identified in building the systems-based logic model	Drivers identified from the QES of clinician experiences
Cross-cutting findings: cultural drivers and clinician experiences		
1. Awareness of the phenomenon	In addition to the actual risk, the narrative of defensive practice and personal risk appears to fuel the individual fear that drives defensive practice. **(Section 4.3.1 – p.38)**	Many participants in these studies were familiar with the concept of defensive medicine and clearly endorsed the broader narrative behind the term *[…] the term defensive medicine had become institutionalised, in the sense that all clinicians in the study had heard of the phenomenon and could comment on its practice*. **(Section 3.4.3 – p.17)**
2. Logic of individual blame	A second cultural-level factor identified as setting the pattern for defensive practice is the logic of individual blame that is characteristic of criminal law in Western societies (Catino and Celotti, 2009, p.4). *The individual blame logic, oriented more towards the identification of a guilty individual as opposed to the key underlying circumstances that led to the error, may be considered to be among the major factors that have led to the spread of defensive medical practices in doctors*. **(Section 4.3.2 – p.38)**	Negative events are regarded not as inevitable and acceptable risks but as fundamental failures. As such, any negative event must be the outcome of a mistake by an identifiable individual. This set of perceptions is identified by participants as a "blame culture" *… I think we are very much a blame culture. We do look for blame*. **(Section 3.5.6 – p.26)**

3. Shift to a market model of healthcare	The governmental market ideology impacts directly on the medical system: *The environment in which nurses and midwives work is certainly marked by the individualistic ethos of the market and, ultimately, it is this ethos that fosters the sense of risk that surrounds practice.* **(Section 4.3.3 – p.39)**	Relatively few participants identified specific aspects of the legislative or policy context as potential drivers of defensive practice. **(Section 3.5.6 – p.26)**
4. Underlying rules and assumptions of modern medical practice	The often-unstated assumptions of biomedicine imply that identifiable truths about diseases can be discovered [...] the implication of these assumptions is that given sufficient knowledge, doctors should almost always be able to make the 'correct' diagnosis or provide the 'correct' therapy which has in turn '*led to a black-or-white dichotomy between correct and incorrect medical practice'*. **(Section 4.3.4 – p.39)**	Guidelines and policies which stipulate a single correct set of procedures were seen to reinforce both the dominance of doctor-led treatment and the broader medical paradigm, thus increasing litigation risk for midwives who do not practice in accordance with this model of care. *We've been sucked into a biomedical model of care, we're frightened to practice any other way*. **(Section 3.6.1 – p.29)**
Cross-cutting findings: institutional drivers and clinician experiences		
5. Media fascination with malpractice cases	Several authors noted that media fascination with malpractice cases could contribute to defensive practices [...] In their examination of mental health services in New Zealand, Mullen et al. (2008) observe that:	Participants saw the media as fostering a generalised suspicion of clinicians by focusing disproportionately on adverse events, and expressed a fear of negative media coverage. Both of these were seen to contribute to a lack of trust in individual patient relationships which, as mentioned in the previous section, may be an important driver of defensive practice. **(Section 3.5.6 – p.26)**

	Controversies in mental health, and occasional tragedies, are often the subject of close media attention and reporting which may be inflammatory. Negative public perception of the mental health service may influence practitioners' decision making and so contribute to defensive practice. **(Section 4.4.1 – p.40)**	
6. Legal institution principles and practices	Several studies suggest that, once defensive practice becomes an established way of thinking, specific principles and practices within the legal system will further entrench it [such as] the 'Bolam principle', i.e. that judgments on the acceptability or adequacy of care can be made based on *'whether or not an individual clinician's practice corresponds to prevailing local practice'* **(Section 4.4.2 – p.41)**	Relatively few participants identified specific aspects of the legislative or policy context as potential drivers of defensive practice. **(Section 3.5.6 – p.26)**
7. Healthcare policies and practices enshrine defensive practice	A range of policies within healthcare institutions were also noted as enshrining or encouraging defensive practice. **(Section 4.4.3 – p.41)** *Policies such as the use of performance indicators, output measurement and performance-related pay, place responsibility on individuals.* **(Section 4.4.3 – p.42)**	Overly restrictive guidelines were felt to be a motivator of unnecessary referrals, over-treatment and over-documentation. **(Section 3.5.3 – p.22)** *These practices resulted from the system-imposed demand to comply and implement evidence-based standardised care such as clinical guidelines, fast-track packages and treatment guarantees.* **(Section 3.5.2 – p.21)**

	Policies that position the patient as a consumer were a second type of healthcare institution mechanism noted for entrenching defensive practice. **(Section 4.4.3 – p.42)**	*All participating GPs talked about how they felt pressured to act defensively because of an increasing request from patients for medical examinations and referrals to specialists.* **(Section 3.5.5 – p.24)**
	Focus on individual accountability within institutions is not merely a reflection of wider cultural values observed at the macro level [...] but is explicitly enshrined in codes of conduct within the NHS. **(Section 4.4.3 – p.42)**	Initiatives to improve accountability and the quality of care were widely seen as an erosion of clinical authority [...] while the loss of autonomy was seen to come about both through regulatory systems and through the more specific threat of litigation, clinicians' understanding of this theme was largely determined by the former. **(Section 3.6.1 – p.27)**
	A fourth institutional policy noted for entrenching defensive practice was the nature of medical training [...] because of the prevalence of defensive practice among physicians, trainees observe and are informally taught to practice defensively. **(Section 4.4.3 – p.42)**	These pressures [to practice defensively] are bound up with the institutional settings and relationships of authority within which clinicians practice [...] relations with peers should be contextualised within the institutional frameworks and hierarchies which govern clinical decision-making. *...the juniors are very aware of that ... I think they do feel vulnerable.* **(Section 3.5.2 – p.22)**

Note: *Text in italics indicates quotes from paper*

5 DISCUSSION

5.1 Overview of findings

The QES on defensive practice has identified a range of themes, including several motivators for and impacts of defensive practice. Across the studies many participants agree that clinical decision-making is at least sometimes influenced by the fear of litigation or complaints, and that this represents sub-optimal care; however, some deny ever practicing defensively themselves, and a few argue that the whole idea is overblown. A range of clinical decisions and treatment practices may be motivated by concern for litigation risk, including Caesarean delivery, induction of labour, foetal monitoring, diagnostic testing, and referrals. Many participants also describe over-documentation as a form of defensive practice. However, some studies found that participants could not identify many concrete examples of defensive practice, despite seeing it as widely prevalent. Several participants suggested that defensive motivations may coexist and interact with other clinically legitimate motives, and that deciding which one is primary may be more a matter of clinical judgement than an objective fact.

Many participants see the threat of litigation as pervasive and unavoidable, even in contexts where the actual number of lawsuits or formal regulatory processes is small, and may perceive it as threatening particularly where they feel isolated from their professional peers.

However, other motivations also enter defensive practice: the desire to avoid adverse events; pressure from patients or families; the loss of trust in the clinician-patient relationship; and a broader culture which is seen to be intolerant of risk and suspicious of clinicians in general. Identification of institutional and cultural drivers from the literature used to construct the systems-based logic model extends and supports this understanding of defensive practice being driven by other factors. Cultural drivers included widespread awareness of the phenomenon, seeking an individual to blame for errors, healthcare delivery being driven by a market ideology and biomedical assumptions underpinning modern medical practice. Our analysis suggests that as the fear of litigation transcended the objective risk of litigation, defensive practice became a widespread cultural phenomenon. And that in turn, key institutional practices and policies both reflect and further entrench defensive practice as a cultural norm. Institutional drivers included media fascination with malpractice cases, legal institution principles and practices and healthcare institution policies and practices.

The QES also addressed the perceived negative impacts of defensive practice. It undermines clinicians' professional autonomy, which affects job satisfaction (although this may be as much to do with a perceived increase in bureaucracy – and, in the midwifery context, medicalisation – as with the risk of litigation). It can lead to

overtreatment and overdiagnosis, and poorer-quality care resulting from the diversion of clinician time and effort into documentation. Several participants reported avoiding certain patients, settings or clinical specialisms – particularly those involving patients with complex needs – to reduce litigation risk, suggesting that defensive practice could exacerbate health inequalities for underserved populations. Defensive practice may impair trusting, empathetic relationships between clinicians and patients. On the other hand, defensive concerns may motivate clinicians to comply with practice guidelines or protocols, although this is itself predominantly viewed negatively in the studies, as patient characteristics vary and rarely fit the standard for treatment. Finally, defensive practice may have negative emotional impacts on individual clinicians, including anxiety, demoralisation and loss of confidence.

5.2 Broader themes and interpretation

This section focuses mainly on the wider findings and implications from the QES to draw out further learning from this work. Where relevant, we have noted when these findings are underscored or extended by the findings from the analysis for the systems-based logic model.

5.2.1 Challenges of definition

Several meta-themes arise from the analysis in the QES. One is that the extent of defensive practice is hard to pin down. While participants are generally clear on the theory, and in most cases agree that defensive practice is widely prevalent – perhaps unsurprisingly, given that in most cases they self-selected for participation in studies focused on defensive practice – several studies suggest that they struggle to identify its impact at the level of specific treatment decisions. (This is less true in the obstetric context, where Caesarean delivery and foetal monitoring are stock examples.) This disconnect between theory and practice is particularly a focus in Bradder's 2007 study, but seems to be implicit in much of the data. Where the studies included in the QES go beyond the abstract level of exploring clinicians' perceptions of the theory, and explore more specifically what they perceive as defensive practice, the data tends to emphasise concerns with documentation and professional autonomy as much as, or more than, identifiable changes to treatment. There is a shared set of narratives about change over time in the direction of defensive practice, and about national differences (particularly between the USA and other countries), but these are hard to link to specific outcomes.

Defensive practice is also hard to pin down because much of it takes place in the 'grey area' of clinical judgement, where defensive considerations may be present but plausibly deniable. While some participants experience the pressure resulting from litigation risk as a clearly demarcated external threat – introducing a perceived dissonance between practice and clinical judgement – the more predominant picture which emerges from the data is one in which it is deeply combined with other concerns and motives, many of which are clinically legitimate. Reasonable caution resulting

from the fear of adverse events may be impossible to separate from the fear of lawsuits or complaints resulting from those adverse events, and the former appears to often be uppermost in clinicians' minds. Whether or not a given decision is identified as an example of defensive practice, then, may have less to do with the specific factors entering the decision, and more to do with the clinician's broader sense of their own role, their relationship with the patient, and the institutional and professional context of that relationship.

Taken together, these concerns suggest some caution about the idea of defensive practice. While the theoretical narrative of defensive practice as a response to the threat of litigation is widely accepted by participants in the studies in the QES, its application tends to drift, in two senses. First, the threat of litigation and complaints opens onto a broader set of concerns about institutional or social pressures on clinicians (a finding which is underscored by the analysis for the systems-based logic model) – including, in particular, regulation and professional autonomy – which are seen as part of defensive practice but which, in many cases, have only a very tenuous relationship with litigation risk. Second, while the stock examples of defensive practice focus on overtreatment and overdiagnosis, further exploration often shows that the practical concerns have more to do with overdocumentation and patient relationships. This is of course not to deny the importance of these broader factors (which are discussed further in the following sections), but it should be recognised that apparently general agreement on the content of the idea conceals wide divergence in its interpretation.

5.2.2 Regulation and de-skilling

One aspect of this broadened understanding of defensive practice is that clinicians often emphasise less the threat of litigation than the bureaucratic demands of modern healthcare, in the form of clinical guidelines, institutional protocols, and paperwork of all kinds. As noted, when asked to reflect on the manifestations of defensive practice, participants appear to have mentioned documentation at least as often as clinical decision-making. Most participants expressed strongly negative views of these demands, linking them to lower professional autonomy, a loss of trust in clinical judgement, and a diversion of clinician time away from patient care. These in turn form part of two broader and interlinked narratives. First, the idea of 'blame culture', where suspicion of professionals combines with low tolerance of risk to require a scapegoat for any negative outcome; and second, the sense that the core mission of clinicians and the healthcare sector in general has been obscured by an unstoppable growth of bureaucracy.

This understanding of defensive practice suggests that the proximal impacts of defensive practice, such as overtreatment or overdiagnosis, need to be placed in a broader context. Many participants in studies in the QES suggested that these immediate impacts on clinical decision-making are symptomatic of a broader shift within the culture of healthcare and the broader society (and hence within individual

clinician-patient relationships). That is, defensive practice refers not only to actions specifically judged to reduce litigation risk, but to the whole field of extraneous factors which may shift clinicians' treatment decisions away from what they judge to be clinically optimal. These factors can include individual determinants, such as patient pressure or clinicians' lack of confidence, but the great majority of the QES data points to social and institutional factors which were subsequently identified in the systems-based logic model work.

Of course, the QES focuses only on clinicians' views (and, as noted below, there is likely to be an element of selection bias which leads to the studies overstating the negative power of perceptions of guidelines and regulation). Other stakeholders might have different narratives about these changes – for example, narratives of improved patient safety and clinical governance; of accountability, transparency and evidence-informed practice; or of a greater willingness in the broader society to question the self-perception of elite professional groups. Without exploring these conflicting narratives in detail here, it is striking that participants in these studies generally express critical views of clinical guidelines and documentation requirements, seeing them as limiting the scope for person-centred care and for acting on their best judgement, and hence as detrimental to the quality of care. At best, they are seen as reassurance against the risk of litigation, but even this limited positive role is set against the background of a more general loss of trust between clinicians, patients and the wider society (cf. Fritz and Holton, 2019).

Our findings thus suggest caution about the idea that defensive practice is a purely negative phenomenon, or that it could be eradicated without harm to other aspects of care. If defensive practice is as much about paperwork, bureaucracy and following guidelines as about sub-optimal treatment, it may be an inevitable consequence of efforts to improve transparency and accountability.

5.2.3 Litigation and overtreatment

The idea of defensive practice has often been given meaning in the literature as part of a causal pathway which leads from the risk of litigation or complaint to sub-optimal care. In particular, much of the policy literature suggests that defensive practice is a major driver of overtreatment and excess costs. The findings of the QES indicate that this linear pathway may be too simple. On the side of impacts, as discussed above, the qualitative evidence does not identify overtreatment as the main negative impact of defensive practice, except in certain contexts. On the side of determinants of defensive practice, while risk of litigation and complaints is frequently mentioned, it is difficult to separate from other factors, particularly the risk of adverse events. Moreover, even where specific fear of litigation is present, this is not a direct reflection of the objective probability of being sued; rather, the latter is refracted through other perceptions and social meanings which determine the significance of this abstract possibility to the clinician's own concrete experience (in line with Beck's (1992) theory of the 'risk society'). In a sense, the very pervasiveness and the psychological impact of

fear of litigation reflect this highly complex relationship. Of course, defensive practice does include specific, pragmatic strategies to mitigate litigation risk – and some professional groups have a complex repertoire of such strategies (see 'Impacts on patient care' above) – but these only represent a small part of the picture.

It is thus debatable whether defensive practice plays the role allotted to it in some theoretical literature, namely mediating the link between objective litigation risk and sub-optimal care. A finding further underscored by the analysis for the systems-based logic model. It should also be noted that the quantitative evidence is equivocal as to whether this link exists. Agarwal et al.'s systematic review of tort reform measures, such as capping the amount of damages payable to plaintiffs, finds that they are associated with reductions in healthcare expenditure in about half of the studies, with half finding no significant effect (Agarwal et al., 2019). Cross-sectional studies linking malpractice liability costs (measured either by actual rates of malpractice lawsuits, or by insurance premiums) to healthcare expenditure have generally found little or no significant correlation (Baicker et al., 2007, Baicker and Chandra, 2005), although studies using more specific outcomes, such as rates of Caesarean section, have sometimes found a relationship (Baicker et al., 2006, Yang et al., 2009). Even where a correlation is observed, it cannot automatically be concluded that defensive practice is the key causal link, given that the outcomes measured represent a snapshot of a highly complex system, and other differences (for example, in healthcare provision or characteristics of the patient population) are likely to play an important role. As well as the possibility of unmeasured confounding variables, there is the question of the direction of causality: higher treatment costs could be a driver of higher malpractice risk as much as *vice versa*.

All these considerations call into question the two key causal claims of the defensive practice discourse: (a) that defensive practice is a major driver of excess treatment costs, and (b) that it mainly responds to objective risk of litigation. High self-reported rates of defensive practice cannot in isolation be taken to indicate that sub-optimal treatment decisions are actually occurring, but need to be addressed in terms of the broader meanings of defensive practice evident in the qualitative data (or at least treated with caution, given the wide variation in clinicians' interpretations of the idea). Finally, virtually all the quantitative evidence and much of the policy thinking comes from the USA, and there are obvious limitations to its generalisability to the UK, given the very different structure of healthcare funding. Even if the theory outlined above proved to be applicable in the context where it was developed, further research would be required to establish that it is true in the UK.

5.2.4 Institutions and relationships

Arguably, another blind spot in much of the quantitative literature and policy discussion which the QES helps to identify is that much of the former has focused on the relationship between policy- and system-level determinants and outcomes on the one hand and individual psychological factors (for example, clinicians' subjective fear

of litigation) on the other. The findings of the QES suggest that an important part of the picture consists of meso-level factors operating at intermediate scales, within professional groups or clinical teams and clinician-patient relationships.

At the group level, the perception of defensive practice may take much of its meaning and its negative value from the friction between groups of clinicians – most often in our data between midwives and doctors, where the organisational conflict is exacerbated by the perception of a fundamentally different philosophy of care, but also between junior and senior clinicians within a professional group. Conversely, the perceived reactions of one's peers and one's employer may be an important determinant of the importance of litigation risk, in that this risk is seen as much more significant where individuals are not supported by colleagues. Clinicians' confidence in their position with respect to their professional peer groups and their institutions may therefore mediate defensive practice at least as much as their perception of broader policy-level factors.

At the level of relationships, participants understand their relationship to patients as a fundamental determinant of defensive practice. These relationships have a reality and history of their own, which is not reducible to the characteristics of the individuals involved (although it is influenced by them). In particular, the loss of trust within patient relationships is a key element of defensive practice.

5.3 Strengths and limitations

5.3.1 Strengths

The QES was conducted according to rigorous systematic review principles. Searches were highly sensitive and covered a range of sources, and the methodology for study selection and data collection was transparent and reproducible. A substantial body of evidence was identified, and a clear set of shared themes across a range of clinical contexts emerged from the literature. The QES and the systems-based logic model were conducted by separate teams of reviewers, thus independent identification of concordant findings adds weight to the interpretations. In addition, the combination of highly nuanced 'on-the-ground' insights and experiences from clinicians in the QES, with a much higher-level assessment of key drivers of defensive practice in the systems-based logic model, enables an holistic assessment of the complexities inherent in the problem; thereby offering insight into the challenges and opportunities for interventions aiming to address it.

5.3.2 Limitations of the primary studies

As described in the findings section, there are some clear limitations in the primary studies examined for the QES. There is likely to be substantial selection and recruitment bias, with generally self-selected samples and a lack of clarity on the sampling methods in the study reports. More substantively, one might argue that many of the primary studies lack a critical perspective on the data. In many cases, the

findings are limited to general perceptions of defensive practice, rather than interrogating how these play out in participants' actual experience, and – as suggested above – these two types of data may tell rather different stories. In several studies, the authors shared a professional background with the participants, and there is little reflection on the potential for bias this may introduce, or inclination to question shared narratives and assumptions.

The QES evidence disproportionately concerns obstetrics and midwifery; while the findings suggest that the main themes are broadly generalisable to other areas of practice, this setting and these professional groups have certain specific characteristics which may not be applicable elsewhere. Caution should be exercised in generalising the findings of this review to clinical practice in general. The studies also come from several countries, although there is a substantial subset (n=7) of studies from the UK. The findings do not suggest major differences between countries; we did not locate any studies from the USA, where there may have been more substantial differences. (This said, the findings arguably suggest that national policy-level factors may be less important than often assumed, although they were mentioned by a few participants.)

In line with methods for developing systems-based logic models (Kneale et al. 2020) many of the studies examined for the systems-based logic model were non-empirical studies, and we did not assess empirical studies for risk-of-bias. As such, the weight of evidence contributed by each study or by the literature as a whole remains unknown.

5.3.3 Limitations of the QES

Inevitably, as with any systematic review, the need for well-defined exclusion criteria means that some potentially illuminating studies are excluded from the QES. For example, we excluded studies of clinicians' experiences of the litigation or complaint process if they did not also examine the impact of these on practice. A more substantive limitation is that defining the scope of the review in terms of a particular explanation or narrative, rather than on a defined phenomenon of interest, is to some extent artificial. That is, rather than examining decision-making in specific contexts and asking how defensive motivations may interact with other determinants – an interaction which, as our findings suggest, is often highly complex and contingent – we effectively isolated the defensive motivations and abstracted them from their concrete setting. The resulting synthesis thus gives only a partial picture, and in conjunction with the potential sampling bias mentioned above, may lead the review to overstate the importance of defensive practice as a theme. In particular, the strongly negative perceptions of guidelines and documentation evident in this review call for comparison with a wider range of relevant evidence, and cannot be assumed to be representative of the broader clinician population.

On the other hand, the relatively narrow thematic focus of the QES did allow themes to emerge which would have been less apparent with a broader approach. In particular,

as described above, focusing specifically on defensive practice allows for a more critical approach to the linear narrative of litigation risk and overtreatment which dominates discussion of the topic, which was only possible by excluding data on these topics in themselves. A more regrettable gap is that we only included studies of clinicians, not patients. While this was inevitable given the way the review was defined – since patients would not express themselves in these terms – the lack of a patient perspective on the situations described in the data is a limitation of the synthesis. There may be relevant insights in qualitative literature on related topics such as overdiagnosis (Rozbroj et al., 2021), and our findings should be seen in this broader context.

We did not carry out any patient and public involvement (PPI) for this project, either with clinicians or with patients. There would have been challenges in involving patients without substantially rethinking the review question, for essentially the same reasons we did not include studies on patient populations, but this could still have generated useful insights. Involving clinicians could have helped, for example, in clarifying the review scope, or illuminating the transferability of the findings.

5.3.4 Limitations of the systems-based logic model

Some of the QES limitations are mitigated, in part, by inclusion of the systems-based logic model work. However, the systems-based logic model has its own limitations, because the searches were purposive rather than systematic and comprehensive, and because the findings are not necessarily empirically-based and, like other systems-based logic models (Kneale et al., 2020), do not take account of the quality or weight of evidence supporting each identified driver.

5.4 Implications for policy, practice and research

While our findings do not directly provide pointers for policy, they may suggest some different perspectives on the choices faced by policy-makers. In particular, they suggest that policy action to limit litigation risk may have limited impact in reducing defensive practice, and hence in lowering costs and improving care. While a full engagement with this question would require a more rigorous approach to the quantitative literature, the QES and systems-based logic model findings provide reasons to be sceptical that direct shifts in national policy to limit litigation risk are likely to produce measurable improvements in care. Similarly, the systems-based logic model findings suggest the need for interventions targeted at the individual, cultural and institutional levels. Indeed, much of the more nuanced USA-based policy thinking around defensive practice already points to the insight that tort reform in isolation may have limited impact if the broader cultural and regulatory contexts of defensive practice are not addressed (Berlin, 2017, Hermer and Brody, 2010, McQuade, 1991).

On the other hand, such policy action might have a symbolic value – in addressing clinicians' broader sense of insecurity, for example, or their perception of patients' unrealistic expectations of care – which could have broader positive impacts. However,

the findings suggest that such symbolic value is likely to be limited if the perception of the bureaucratisation and de-skilling of clinicians' roles persists. It seems reasonable to assume that this perception is at least partly grounded in the reality of the broad direction of policy and healthcare governance (in the UK and other countries) over the last few decades. If so, it is unlikely that specific policy shifts, without large-scale socio-political realignment, will address this perception. Moreover, any such policy would have to negotiate potentially important trade-offs with other goals, such as accountability and safety. Such considerations obviously go far beyond the narrow question of defensive practice, and the findings of this review are only a very small part of the relevant evidence.

The finding that clinicians may avoid potentially 'risky' areas of practice or groups of patients for defensive reasons (section 3.6.2 above) is troubling in view of its implications for patient safety and equity in healthcare access. This point calls for further research to establish how serious a problem this is in the current UK context, and how it might be mitigated. More broadly, the findings suggest a role for professional bodies and organisations issuing guidelines in addressing the problems of defensive practice. In some cases it may be helpful to review clinical guidance and training materials with a view to better supporting clinicians facing litigation risk. However, this is not straightforward in practice, and the solutions already adopted at policy level (increasing clarity of guidelines and demands for documentation) are often felt by clinicians to be part of the problem.

The review suggests that further research work on clinicians' views of defensive practice is probably of limited value unless it adopts a more critical perspective on what is actually meant by the concept, rather than automatically endorsing clinicians' value judgements. Qualitative research and theoretical work might benefit from setting the perceptions identified and described in this review alongside broader ideas around clinical authority and the negotiation of power dynamics within clinician-patient encounters, and across clinical organisations, and from developing ways to integrate patient perspectives into narratives around defensive practice.

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APPENDIX A. LITERATURE SEARCHING

Comprehensive searches of published and grey literature were undertaken to identify qualitative studies of defensive medicine. The search strategy was designed in Ovid MEDLINE using a range of subject headings and free-text terms relating to the practice of defensive medicine, including clinicians' fear of legal or disciplinary action. A search filter was incorporated into the strategy to restrict retrieval to qualitative studies (Wong et al., 2004). Further qualitative terms were added to the search filter to increase sensitivity, including terms to capture any qualitative reviews or mixed methods studies. A date limit was applied to restrict retrieval to studies published from 2000 onwards. The searches were not restricted by language.

The MEDLINE search strategy was adapted for use in all databases searched. Ten databases were searched in total during January 2020: MEDLINE ALL (Ovid), Embase (Ovid), PsycINFO (Ovid), Allied and Complementary Medicine - AMED (Ovid), Maternity and Infant Care (Ovid), Cumulative Index to Nursing & Allied Health - CINHAL Complete (EBSCO), Applied Social Science Index and Abstracts - ASSIA (ProQuest), Sociological Abstracts (ProQuest), ProQuest Dissertations & Theses A&I (ProQuest), and PROSPERO - international prospective register of systematic reviews. 20,424 records were identified through the database searches. Records were imported into EndNote X9 and duplicates removed, leaving a total of 12,360 records for screening.

Supplementary search methods were employed to identify further relevant studies. The websites of the General Medical Council, Care Quality Commission, Professional Standards Authority and Health & Care Professions Council were searched to identify any relevant reports of qualitative research on defensive medicine. The reference lists of all included studies were checked for further studies. In addition, forward citation searching of all included studies was carried out via the Web of Science. Finally, Google Scholar was searched using a simplified version of the MEDLINE search strategy and the first 50 hits were screened for relevance.

Full search strategies follow.

MEDLINE(R) ALL

via Ovid http://ovidsp.ovid.com/
1946 to January 06, 2020
Searched on: 7th January 2020
Records retrieved: 3650

1 Defensive Medicine/ (1228)
2 (defensive$ adj4 (medicine or medical)).ti,ab,kf. (549)
3 (defensive$ adj4 practic$).ti,ab,kf. (272)

4 (defensive$ adj4 decision$).ti,ab,kf. (15)
5 (defensive$ adj4 work$).ti,ab,kf. (67)
6 or/1-5 (1651)
7 Liability, Legal/ (15518)
8 Jurisprudence/ (29681)
9 Malpractice/ (27599)
10 Professional Misconduct/ (3305)
11 Employee Discipline/ (1483)
12 "Compensation and Redress"/ (2958)
13 or/7-12 (69771)
14 Fear/ (30785)
15 13 and 14 (143)
16 (fear$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (975)
17 (anxiet$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (828)
18 ((worry or worrie$) adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (120)
19 (apprehensi$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (26)
20 (afraid adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (11)
21 (dread$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (9)
22 (threat$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (639)
23 (expos$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (1697)
24 (avoid$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (1610)
25 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 disciplin$ adj4 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$)).ti,ab. (36)

26 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 (professional$ or formal$ or external$ or official$) adj4 regulat$).ti,ab. (29)
27 or/16-26 (5818)
28 15 or 27 (5908)
29 Professional Practice/ (16569)
30 Practice Patterns, Physicians'/ (57658)
31 Practice Patterns, Dentists'/ (2304)
32 Institutional Practice/ (1236)
33 Professional Autonomy/ (9418)
34 or/29-33 (86199)
35 13 and 34 (1544)
36 (practice$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (5184)
37 (behav$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (2945)
38 (autonom$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (574)
39 ((professional$ or formal$ or external$ or official$) adj6 regulat$ adj6 (practice$ or behav$ or autonom$)).ti,ab. (436)
40 (disciplinary adj6 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$) adj6 (practice$ or behav$ or autonom$)).ti,ab. (76)
41 or/36-40 (9120)
42 35 or 41 (10492)
43 (defensive$ adj3 (act or acts or action$ or approach$ or strateg$)).ti,ab. (834)
44 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct or regulat$ or disciplin$).ti,ab. (2140997)
45 13 or 44 (2183723)
46 43 and 45 (124)
47 6 or 28 or 42 or 46 (17382)
48 exp Qualitative Research/ (51111)
49 Interview/ (28868)
50 Focus Groups/ (28404)
51 Qualitative.mp. (233907)
52 Interview$.mp. (375647)
53 Experience$.mp. (1032821)
54 Focus group$.ti,ab. (43896)
55 (attitude$ or belief$ or believ$ or opinion$ or perceiv$ or perception$ or preference$ or view or views or viewpoint$).ti,ab. (1282551)

56 or/48-55 (2496195)
57 47 and 56 (4742)
58 (mixed method$ or multimethod$ or multi-method$ or multi method$).mp. (23059)
59 realist synthes$.ti,ab. (198)
60 (meta-synthes$ or metasynthes$).ti,ab. (1131)
61 (meta-ethnograph$ or metaethnograph$).ti,ab. (536)
62 (meta-study or metastudy).ti,ab. (99)
63 realist review$.ti,ab. (305)
64 or/58-63 (24978)
65 47 and 64 (65)
66 57 or 65 (4750)
67 exp animals/ not humans/ (4660757)
68 66 not 67 (4655)
69 limit 68 to yr="2000 -Current" (3650)

Embase
via Ovid http://ovidsp.ovid.com/
1974 to 2020 January 03
Searched on: 7th January 2020
Records retrieved: 6378

1 defensive medicine/ (382)
2 (defensive$ adj4 (medicine or medical)).ti,ab,kw. (663)
3 (defensive$ adj4 practice$).ti,ab,kw. (322)
4 (defensive$ adj4 decision$).ti,ab,kw. (17)
5 (defensive$ adj4 work$).ti,ab,kw. (75)
6 1 or 2 or 3 or 4 or 5 (1046)
7 legal liability/ (16441)
8 medical liability/ (4388)
9 jurisprudence/ (24173)
10 malpractice/ (31981)
11 professional misconduct/ (3808)
12 negligence/ (4317)
13 law suit/ (11377)
14 compensation/ (14152)
15 medicolegal aspect/ (26000)
16 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 (114511)
17 fear/ (58964)
18 16 and 17 (615)
19 (fear$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (1232)

20 (anxiet$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (1242)
21 ((worry or worrie$) adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (174)
22 (apprehensi$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (29)
23 (afraid adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (16)
24 (dread$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (11)
25 (threat$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (743)
26 (expos$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (2147)
27 (avoid$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (2093)
28 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 disciplin$ adj4 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$)).ti,ab. (42)
29 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 (professional$ or formal$ or external$ or official$) adj4 regulat$).ti,ab. (35)
30 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 (7575)
31 18 or 30 (7963)
32 professional practice/ (58627)
33 clinical practice/ (275280)
34 medical practice/ (86907)
35 32 or 33 or 34 (411113)
36 16 and 35 (9503)
37 (practice$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (6568)
38 (behav$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (3833)

39 (autonom$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (750)
40 ((professional$ or formal$ or external$ or official$) adj6 regulat$ adj6 (practice$ or behav$ or autonom$)).ti,ab. (521)
41 (disciplinary adj6 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$) adj6 (practice$ or behav$ or autonom$)).ti,ab. (98)
42 37 or 38 or 39 or 40 or 41 (11648)
43 36 or 42 (20509)
44 (defensive$ adj3 (act or acts or action$ or approach$ or strateg$)).ti,ab. (941)
45 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct or regulat$ or disciplin$).ti,ab. (2689239)
46 45 or 16 (2762527)
47 44 and 46 (158)
48 6 or 31 or 43 or 47 (28613)
49 exp qualitative research/ (70735)
50 interviews$.mp. or interview/ or semi structured interview/ or structured interview/ or exp telephone interview/ or unstructured interview/ (485827)
51 (focus adj group$).mp. (55214)
52 qualitative.mp. (307073)
53 Experience$.mp. (1456213)
54 (attitude$ or belief$ or believ$ or opinion$ or perceiv$ or perception$ or preference$ or view or views or viewpoint$).ti,ab. (1595190)
55 49 or 50 or 51 or 52 or 53 or 54 (3280244)
56 48 and 55 (7705)
57 (mixed method$ or multimethod$ or multi-method$ or multi method$).mp. (27517)
58 realist synthes$.ti,ab. (187)
59 (meta-synthes$ or metasynthes$).ti,ab. (1238)
60 (meta-ethnograph$ or metaethnograph$).ti,ab. (587)
61 (meta-study or metastudy).ti,ab. (113)
62 realist review$.ti,ab. (324)
63 57 or 58 or 59 or 60 or 61 or 62 (29588)
64 48 and 63 (88)
65 56 or 64 (7719)
66 (animal/ or animal experiment/ or animal model/ or animal tissue/ or nonhuman/) not exp human/ (5911147)
67 65 not 66 (7576)
68 limit 67 to yr="2000 -Current" (6378)

PsycINFO
via Ovid http://ovidsp.ovid.com/

1987 to December Week 5, 2019
Searched on: 7th January 2020
Records retrieved: 3604

1 (defensive$ adj4 (medicine or medical)).ti,ab,id. (63)
2 (defensive$ adj4 practic$).ti,ab,id. (124)
3 (defensive$ adj4 decision$).ti,ab,id. (28)
4 (defensive$ adj4 work$).ti,ab,id. (122)
5 1 or 2 or 3 or 4 (298)
6 professional liability/ (1845)
7 litigation/ (1319)
8 legal processes/ (12598)
9 6 or 7 or 8 (14964)
10 fear/ (14896)
11 9 and 10 (28)
12 (fear$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (388)
13 (anxiet$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (851)
14 ((worry or worrie$) adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (72)
15 (apprehensi$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (19)
16 (afraid adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (5)
17 (dread$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (1)
18 (threat$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (342)
19 (expos$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (491)
20 (avoid$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (582)

21 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 disciplin$ adj4 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$)).ti,ab. (22)
22 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 (professional$ or formal$ or external$ or official$) adj4 regulat$).ti,ab. (13)
23 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 (2721)
24 11 or 23 (2737)
25 clinical practice/ (18945)
26 professional role/ (339)
27 autonomy/ (6583)
28 25 or 26 or 27 (25824)
29 9 and 28 (202)
30 (practice$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (3225)
31 (behav$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (3549)
32 (autonom$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).ti,ab. (341)
33 ((professional$ or formal$ or external$ or official$) adj6 regulat$ adj6 (practice$ or behav$ or autonom$)).ti,ab. (405)
34 (disciplinary adj6 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$) adj6 (practice$ or behav$ or autonom$)).ti,ab. (111)
35 30 or 31 or 32 or 33 or 34 (7514)
36 29 or 35 (7647)
37 (defensive$ adj3 (act or acts or action$ or approach$ or strateg$)).ti,ab. (718)
38 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct or regulat$ or disciplin$).ti,ab. (335793)
39 9 or 38 (339367)
40 37 and 39 (101)
41 5 or 24 or 36 or 40 (10496)
42 exp qualitative methods/ (14143)
43 qualitative measures/ (45)
44 interviews/ or semi-structured interview/ or exp interviewing/ (9906)
45 qualitative.tw. (155055)
46 interview$.tw. (292619)
47 experience$.tw. (551722)
48 focus group$.ti,ab. (33808)

49 (attitude$ or belief$ or believ$ or opinion$ or perceiv$ or perception$ or preference$ or view or views or viewpoint$).ti,ab. (832208)
50 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 (1382427)
51 41 and 50 (4360)
52 (mixed method$ or multimethod$ or multi-method$ or multi method$).mp. (27969)
53 realist synthes$.ti,ab. (76)
54 (meta-synthes$ or metasynthes$).ti,ab. (749)
55 (meta-ethnograph$ or metaethnograph$).ti,ab. (305)
56 (meta-study or metastudy).ti,ab. (83)
57 realist review$.ti,ab. (69)
58 52 or 53 or 54 or 55 or 56 or 57 (29064)
59 41 and 58 (85)
60 51 or 59 (4369)
61 (rat or rats or mouse or mice or hamster or hamsters or animal or animals or dog or dogs or cat or cats or bovine or sheep).ti,ab,sh. (260599)
62 60 not 61 (4285)
63 limit 62 to yr="2000 -Current" (3604)

Allied and Complementary Medicine (AMED)
via Ovid http://ovidsp.ovid.com/
1985 to December 2019
Searched on: 7th January 2020
Records retrieved: 422

1 (defensive$ adj4 (medicine or medical)).mp. (2)
2 (defensive$ adj4 practic$).mp. (1)
3 (defensive$ adj4 decision$).mp. (3)
4 (defensive$ adj4 work$).mp. (2)
5 1 or 2 or 3 or 4 (8)
6 jurisprudence/ (1155)
7 malpractice/ (134)
8 6 or 7 (1264)
9 fear/ (514)
10 8 and 9 (0)
11 (fear$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (22)
12 (anxiet$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (25)

13 ((worry or worrie$) adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (0)
14 (apprehensi$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (1)
15 (afraid adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (0)
16 (dread$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (0)
17 (threat$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (10)
18 (expos$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (24)
19 (avoid$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (38)
20 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 disciplin$ adj4 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$)).mp. (0)
21 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 (professional$ or formal$ or external$ or official$) adj4 regulat$).mp. (0)
22 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 (117)
23 10 or 22 (117)
24 professional practice/ (7684)
25 8 and 24 (99)
26 (practice$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (273)
27 (behav$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (77)
28 (autonom$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (29)
29 ((professional$ or formal$ or external$ or official$) adj6 regulat$ adj6 (practice$ or behav$ or autonom$)).mp. (19)

30 (disciplinary adj6 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$) adj6 (practice$ or behav$ or autonom$)).mp. (7)
31 26 or 27 or 28 or 29 or 30 (394)
32 25 or 31 (481)
33 (defensive$ adj3 (act or acts or action$ or approach$ or strateg$)).mp. (15)
34 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct or regulat$ or disciplin$).mp. (12133)
35 8 or 34 (12949)
36 33 and 35 (3)
37 5 or 23 or 32 or 36 (596)
38 limit 37 to yr="2000 -Current" (422)

Maternity and Infant Care
via Ovid http://ovidsp.ovid.com/
1971 to November 2019
Searched on: 7th January 2020
Records retrieved: 187

1 (defensive$ adj4 (medicine or medical)).mp. (31)
2 (defensive$ adj4 practic$).mp. (32)
3 (defensive$ adj4 decision$).mp. (2)
4 (defensive$ adj4 work$).mp. (1)
5 1 or 2 or 3 or 4 (56)
6 (fear$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (112)
7 (anxiet$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (9)
8 ((worry or worrie$) adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (4)
9 (apprehensi$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (0)
10 (afraid adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (3)
11 (dread$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (1)

12 (threat$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (35)
13 (expos$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (36)
14 (avoid$ adj4 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (59)
15 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 disciplin$ adj4 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$)).mp. (5)
16 ((fear$ or anxiet$ or worry or worrie$ or apprehensi$ or afraid or dread$ or threat$ or expos$ or avoid$) adj4 (professional$ or formal$ or external$ or official$) adj4 regulat$).mp. (0)
17 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 (256)
18 (practice$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (301)
19 (behav$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (41)
20 (autonom$ adj6 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct)).mp. (25)
21 ((professional$ or formal$ or external$ or official$) adj6 regulat$ adj6 (practice$ or behav$ or autonom$)).mp. (75)
22 (disciplinary adj6 (action$ or measure or measures or procedure$ or proceeding$ or process$ or sanction$) adj6 (practice$ or behav$ or autonom$)).mp. (5)
23 18 or 19 or 20 or 21 or 22 (441)
24 (defensive$ adj3 (act or acts or action$ or approach$ or strateg$)).mp. (2)
25 (legal$ or liabilit$ or complaint$ or litigat$ or claim$ or lawsuit$ or prosecut$ or compensation$ compensation$ or damages or "being sued" or malpractice or negligen$ or misconduct or regulat$ or disciplin$).mp. (14449)
26 24 and 25 (0)
27 5 or 17 or 23 or 26 (691)
28 qualitative.mp. (6787)
29 interviews$.mp. (13986)
30 experience$.mp. (31631)
31 focus group$.mp. (2322)
32 (attitude$ or belief$ or believ$ or opinion$ or perceiv$ or perception$ or preference$ or view or views or viewpoint$).ti,ab. (26296)
33 28 or 29 or 30 or 31 or 32 (58304)

34 27 and 33 (237)
35 (mixed method$ or multimethod$ or multi-method$ or multi method$).mp. (921)
36 realist synthes$.ti,ab. (6)
37 (meta-synthes$ or metasynthes$).ti,ab. (112)
38 (meta-ethnograph$ or metaethnograph$).ti,ab. (75)
39 (meta-study or metastudy).ti,ab. (5)
40 realist review$.ti,ab. (12)
41 35 or 36 or 37 or 38 or 39 or 40 (1088)
42 27 and 41 (5)
43 34 or 42 (237)
44 limit 43 to yr="2000 -Current" (187)

Cumulative Index to Nursing & Allied Health (CINAHL Complete)
via Ebsco https://www.ebscohost.com/
Inception to 7th January 2020
Searched on: 7th January 2020
Records retrieved: 2559

S1	TI (defensive* N4 (medicine or medical)) OR AB (defensive* N4 (medicine or medical))	196
S2	TI defensive* N4 practic* OR AB defensive* N4 practic*	149
S3	TI defensive* N4 decision* OR AB defensive* N4 decision*	10
S4	TI defensive* N4 work* OR AB defensive* N4 work*	34
S5	S1 OR S2 OR S3 OR S4	308
S6	(MH "Liability, Legal")	13,753
S7	(MH "Jurisprudence")	7,206
S8	(MH "Malpractice")	9,251
S9	(MH "Professional Misconduct")	4,485
S10	(MH "Employee Discipline")	1,262
S11	(MH "Damages, Legal")	2,557
S12	(MH "Professional Regulation")	6,072
S13	(MH "Legal Procedure")	5,422
S14	(MH "Negligence")	4,298
S15	(S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14)	44,394
S16	(MH "Fear")	11,679
S17	S15 AND S16	120
S18	TI (fear* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (fear* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	544
S19	TI (anxiet* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (anxiet* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	357
S20	TI ((worry or worrie*) N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB ((worry or worrie*) N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	82

S21	TI (apprehensi* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (apprehensi* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	10
S22	TI (afraid N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (afraid N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	13
S23	TI (dread* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (dread* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	3
S24	TI (threat* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (threat* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	421
S25	TI (expos* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (expos* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	1,087
S26	TI (avoid* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (avoid* N4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	1,362
S27	TI ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) N4 disciplin* N4 (action* or measure or measures or procedure* or proceeding* or process* or sanction*)) OR AB ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) N4 disciplin* N4 (action* or measure or measures or procedure* or proceeding* or process* or sanction*))	35
S28	TI ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) N4 (professional* or formal* or external* or official*) N4 regulat*)) OR AB ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) N4 (professional* or formal* or external* or official*) N4 regulat*))	11
S29	S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28	3,837
S30	S17 OR S29	3,926
S31	(MH "Professional Practice")	14,752
S32	(MH "Practice Patterns")	12,163
S33	(MH "Professional Autonomy")	4,520
S34	S31 OR S32 OR S33	31,070
S35	S15 AND S34	844
S36	TI (practice* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (practice* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	3,338
S37	TI (behav* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (behav* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	1,361
S38	TI (autonom* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct)) OR AB (autonom* N6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct))	329

S39	TI ((professional* or formal* or external* or official*) N6 regulat* N6 (practice* or behav* or autonom*)) OR AB ((professional* or formal* or external* or official*) N6 regulat* N6 (practice* or behav* or autonom*))	304
S40	TI (disciplinary N6 (action* or measure or measures or procedure* or proceeding* or process* or sanction*) N6 (practice* or behav* or autonom*)) OR AB (disciplinary N6 (action* or measure or measures or procedure* or proceeding* or process* or sanction*) N6 (practice* or behav* or autonom*))	64
S41	S36 OR S37 OR S38 OR S39 OR S40	5,323
S42	S35 OR S41	6,078
S43	TI (defensive* N3 (act or acts or action* or approach* or strateg*)) OR AB (defensive* N3 (act or acts or action* or approach* or strateg*))	136
S44	TI (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* compensation* or damages or "being sued" or malpractice or negligen* or misconduct or regulat* or disciplin*) OR AB (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* compensation* or damages or "being sued" or malpractice or negligen* or misconduct or regulat* or disciplin*)	282,678
S45	S15 OR S44	309,590
S46	S43 AND S45	23
S47	S5 OR S30 OR S42 OR S46	9,957
S48	(MH "Qualitative Studies+")	133,616
S49	(MH "Qualitative Validity+")	1,563
S50	(MH "Interviews+")	202,572
S51	(MH "Focus Groups")	39,562
S52	TI qualitative OR AB qualitative	111,074
S53	TI interview* OR AB interview*	189,113
S54	TI experience* OR AB experience*	364,137
S55	TI Focus N1 group* OR AB Focus N1 group*	31,393
S56	TI (attitude* or belief* or believ* or opinion* or perceiv* or perception* or preference* or view or views or viewpoint*) OR AB (attitude* or belief* or believ* or opinion* or perceiv* or perception* or preference* or view or views or viewpoint*)	420,614
S57	S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56	904,477
S58	S47 AND S57	2,805
S59	(MH "Multimethod Studies")	13,122
S60	TI ((mixed N1 method* or multimethod* or multi N1 method*)) OR AB ((mixed N1 method* or multimethod* or multi N1 method*))	17,171
S61	(MH "Meta Synthesis")	1,465
S62	TI realist N1 synthes* OR AB realist N1 synthes*	124
S63	TI (meta-synthes* or metasynthes*) OR AB (meta-synthes* or metasynthes*)	1,027
S64	TI (meta-ethnograph* or metaethnograph*) OR AB (meta-ethnograph* or metaethnograph*)	425
S65	TI (meta-study or metastudy) OR AB (meta-study or metastudy)	81
S66	TI realist N1 review* OR AB realist N1 review*	207
S67	S59 OR S60 OR S61 OR S62 OR S63 OR S64 OR S65 OR S66	27,364
S68	S47 AND S67	65
S69	S58 OR S68	2,816
S70	S58 OR S68 Limiters - Published Date: 20000101-20201231	2,559

ASSIA

via ProQuest https://www.proquest.com/

1987 to current

Searched on: 7th January 2020

Records retrieved: 1246

Due to the limited functionality of the search interface the search strategy had to be split into 11 search lines and the results for each line downloaded into an EndNote library for deduplication.

S1	(TI,AB,IF(defensive* NEAR/4 (medicine OR medical)) OR TI,AB,IF(defensive* NEAR/4 practic*) OR TI,AB,IF(defensive* NEAR/4 decision*) OR TI,AB,IF(defensive* NEAR/4 work*)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	57
S2	(MAINSUBJECT.EXACT("Fear") AND ((MAINSUBJECT.EXACT.EXPLODE("Liability") OR MAINSUBJECT.EXACT("Jurisprudence") OR MAINSUBJECT.EXACT("Medical malpractice") OR MAINSUBJECT.EXACT("Professional misconduct") OR SU(malpractice) OR MAINSUBJECT.EXACT("Disciplinary procedures") OR MAINSUBJECT.EXACT.EXPLODE("Compensation") OR MAINSUBJECT.EXACT.EXPLODE("Damages") OR MAINSUBJECT.EXACT("Litigation") OR MAINSUBJECT.EXACT("Claims")) OR ((MAINSUBJECT.EXACT("Negligence") OR MAINSUBJECT.EXACT("Medical negligence")) OR MAINSUBJECT.EXACT("Regulation")))) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	6
S3	TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi*) NEAR/4 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR	187

	MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	
S4	TI,AB((afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	157
S5	TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 disciplin* NEAR/4 (action* OR measure OR measures OR procedure* OR proceeding* OR process* OR sanction*)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	3
S6	TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 (professional* OR formal* OR external* OR official*) NEAR/4 regulat*) AND (((MAINSUBJECT.EXACT("Qualitative data") OR	1

	MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	
S7	TI,AB((practice* OR behav* OR autonom*) NEAR/6 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	705
S8	TI,AB((professional* OR formal* OR external* OR official*) NEAR/6 regulat* NEAR/6 (practice* OR behav* OR autonom*)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	55
S9	TI,AB(disciplinary NEAR/6 (action* OR measure OR measures OR procedure* OR proceeding* OR process* OR sanction*) NEAR/6 (practice* OR behav* OR autonom*)) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR	17

	MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	
S10	((((MAINSUBJECT.EXACT.EXPLODE("Liability") OR MAINSUBJECT.EXACT("Jurisprudence") OR MAINSUBJECT.EXACT("Medical malpractice") OR MAINSUBJECT.EXACT("Professional misconduct") OR SU(malpractice) OR MAINSUBJECT.EXACT("Disciplinary procedures") OR MAINSUBJECT.EXACT.EXPLODE("Compensation") OR MAINSUBJECT.EXACT.EXPLODE("Damages") OR MAINSUBJECT.EXACT("Litigation") OR MAINSUBJECT.EXACT("Claims")) OR ((MAINSUBJECT.EXACT("Negligence") OR MAINSUBJECT.EXACT("Medical negligence")) OR MAINSUBJECT.EXACT("Regulation"))) OR TI,AB(legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct OR regulat* OR disciplin*)) AND TI,AB(defensive* NEAR/3 (act OR acts OR action* OR approach* OR strateg*))) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	8
S11	((MAINSUBJECT.EXACT("Professional practices") OR MAINSUBJECT.EXACT("Practice") OR MAINSUBJECT.EXACT("Autonomous practice") OR MAINSUBJECT.EXACT("Professional autonomy") OR MAINSUBJECT.EXACT("Autonomy")) AND ((MAINSUBJECT.EXACT.EXPLODE("Liability") OR MAINSUBJECT.EXACT("Jurisprudence") OR MAINSUBJECT.EXACT("Medical malpractice") OR MAINSUBJECT.EXACT("Professional misconduct") OR SU(malpractice) OR MAINSUBJECT.EXACT("Disciplinary procedures") OR MAINSUBJECT.EXACT.EXPLODE("Compensation") OR MAINSUBJECT.EXACT.EXPLODE("Damages") OR MAINSUBJECT.EXACT("Litigation") OR MAINSUBJECT.EXACT("Claims")) OR	50

	((MAINSUBJECT.EXACT("Negligence") OR MAINSUBJECT.EXACT("Medical negligence")) OR MAINSUBJECT.EXACT("Regulation")))) AND (((MAINSUBJECT.EXACT("Qualitative data") OR MAINSUBJECT.EXACT("Qualitative methods") OR MAINSUBJECT.EXACT("Qualitative analysis") OR MAINSUBJECT.EXACT("Qualitative research")) OR su(interview*) OR MAINSUBJECT.EXACT("Focus groups")) OR (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (MAINSUBJECT.EXACT("Multimethod research") OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)))) AND pd(2000-2020)	

Sociological Abstracts
via ProQuest https://www.proquest.com/
1952 to current
Searched on: 8th January 2020
Records retrieved: 1916

Due to the limited functionality of the search interface the search strategy had to be split into 11 search lines and the results for each line downloaded into an EndNote library for deduplication.

S1	(TI,AB,IF(defensive* NEAR/4 (medicine OR medical)) OR TI,AB,IF(defensive* NEAR/4 practic*) OR TI,AB,IF(defensive* NEAR/4 decision*) OR TI,AB,IF(defensive* NEAR/4 work*)) AND ((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND pd(2000-2020)	33
S2	((MAINSUBJECT.EXACT("Liability") OR su(("Professional liability")) OR MAINSUBJECT.EXACT("Jurisprudence") OR MAINSUBJECT.EXACT("Legal Procedure") OR MAINSUBJECT.EXACT("Professional Malpractice") OR su(malpractice) OR su("Medical malpractice") OR su("Professional misconduct") OR su("employee discipline") OR MAINSUBJECT.EXACT("Compensation") OR MAINSUBJECT.EXACT("Litigation") OR MAINSUBJECT.EXACT("Regulation")) AND MAINSUBJECT.EXACT("Fear")) AND ((MAINSUBJECT.EXACT("Qualitative Methods") OR	14

	MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND pd(2000-2020)	
S4	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi*) NEAR/4 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND pd(2000-2020)	103
S5	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND pd(2000-2020)	300
S6	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 disciplin* NEAR/4 (action* OR	6

	measure OR measures OR procedure* OR proceeding* OR process* OR sanction*)) AND pd(2000-2020)	
S7	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 (professional* OR formal* OR external* OR official*) NEAR/4 regulat*) AND pd(2000-2020)	3
S8	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((practice* OR behav* OR autonom*) NEAR/6 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND pd(2000-2020)	1384
S9	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB((professional* OR formal* OR external* OR official*) NEAR/6 regulat* NEAR/6 (practice* OR behav* OR autonom*)) AND pd(2000-2020)	54
S10	((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR	14

	TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND TI,AB(disciplinary NEAR/6 (action* OR measure OR measures OR procedure* OR proceeding* OR process* OR sanction*) NEAR/6 (practice* OR behav* OR autonom*)) AND pd(2000-2020)	
S11	(TI,AB(defensive* NEAR/3 (act OR acts OR action* OR approach* OR strateg*)) AND ((MAINSUBJECT.EXACT("Liability") OR su(("Professional liability")) OR MAINSUBJECT.EXACT("Jurisprudence") OR MAINSUBJECT.EXACT("Legal Procedure") OR MAINSUBJECT.EXACT("Professional Malpractice") OR su(malpractice) OR su("Medical malpractice") OR su("Professional misconduct") OR su("employee discipline") OR MAINSUBJECT.EXACT("Compensation") OR MAINSUBJECT.EXACT("Litigation") OR MAINSUBJECT.EXACT("Regulation")) OR TI,AB(legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct OR regulat* OR disciplin*))) AND ((MAINSUBJECT.EXACT("Qualitative Methods") OR MAINSUBJECT.EXACT("Interviews") OR MAINSUBJECT.EXACT("Group Research") OR TI,AB,IF,SU(qualitative) OR TI,AB,IF,SU(Interview*) OR TI,AB,IF,SU(Experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*)) OR (TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*))) AND pd(2000-2020)	13

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Searched on: 8th January 2020
Records retrieved: 400

Due to the limited functionality of the search interface a pragmatic approach was taken, limiting the search to key terms only. Six search lines were used with the results for each line downloaded into an EndNote library for deduplication

S1	(TI,AB,IF,SU(defensive* NEAR/4 (medicine OR medical)) OR TI,AB,IF,SU(defensive* NEAR/4 practic*) OR TI,AB,IF,SU(defensive* NEAR/4 decision*) OR TI,AB,IF,SU(defensive* NEAR/4 work*)) AND (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*) OR TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)) AND pd(20000101-20201231)	86

S2	TI,AB,IF,SU(fear* NEAR/4 (legal* OR liabilit* OR complaint* OR litigat* OR claim* OR lawsuit* OR prosecut* OR compensation* OR damages OR "being sued" OR malpractice OR negligen* OR misconduct)) AND (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*) OR TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)) AND pd(20000101-20201231)	123
S3	TI,AB,IF,SU((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 (professional* OR formal* OR external* OR official*) NEAR/4 regulat*) AND (TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*) OR TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)) AND pd(20000101-20201231)	8
S4	(TI,AB,IF,SU(qualitative OR interview* OR experience*) OR TI,AB,IF,SU(Focus NEAR/1 group*) OR TI,AB(attitude* OR belief* OR believ* OR opinion* OR perceiv* OR perception* OR preference* OR view OR views OR viewpoint*) OR TI,AB,IF,SU(mixed NEAR/1 method* OR multimethod* OR multi NEAR/1 method*) OR TI,AB,IF,SU(realist NEAR/1 synthes*) OR TI,AB,IF,SU(meta-synthes* OR metasynthes*) OR TI,AB,IF,SU(meta-ethnograph* OR metaethnograph*) OR TI,AB,IF,SU(meta-study OR metastudy) OR TI,AB,IF,SU(realist NEAR/1 review*)) AND TI,AB,IF,SU(defensive* NEAR/3 (act OR acts OR action* OR approach* OR strateg*)) AND pd(20000101-20201231)	173
S5	TI,AB,IF,SU((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 disciplin* NEAR/4 (action* OR measure OR measures OR procedure* OR proceeding* OR process* OR sanction*))	19
S6	TI,AB,IF,SU((fear* OR anxiet* OR worry OR worrie* OR apprehensi* OR afraid OR dread* OR threat* OR expos* OR avoid*) NEAR/4 disciplin* NEAR/4 (action* OR measure OR measures OR procedure* OR proceeding* OR process* OR sanction*)) AND pd(20000101-20201231)	10

PROSPERO

https://www.crd.york.ac.uk/prospero/

Searched on: 7th January 2020

Records retrieved: 62

#1	MeSH DESCRIPTOR Defensive medicine	0
#2	defensive* adj4 (medicine or medical)	0
#3	defensive* adj4 practic*	1

#4 defensive* adj4 decision* 0
#5 defensive* adj4 work* 0
#6 #1 OR #2 OR #3 OR #4 OR #5 1
#7 MeSH DESCRIPTOR Liability, Legal 1
#8 MeSH DESCRIPTOR Jurisprudence 2
#9 MeSH DESCRIPTOR Jurisprudence EXPLODE ALL TREES 130
#10 MeSH DESCRIPTOR Malpractice 2
#11 MeSH DESCRIPTOR Professional Misconduct 0
#12 MeSH DESCRIPTOR Professional Misconduct EXPLODE ALL TREES 3
#13 MeSH DESCRIPTOR Employee Discipline 0
#14 MeSH DESCRIPTOR Compensation and Redress 2
#15 #7 OR #8 OR #10 OR #11 OR #13 OR #14 6
#16 MeSH DESCRIPTOR Fear 72
#17 #15 AND #16 0
#18 fear* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 2
#19 anxiet* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 10
#20 (worry or worrie*) adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 0
#21 apprehensi* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 0
#22 afraid adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 0
#23 dread* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 0
#24 threat* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 1
#25 expos* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 8
#26 avoid* adj4 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 1

#27 ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) adj4 disciplin* adj4 (action* or measure or measures or procedure* or proceeding* or process* or sanction*)) 0
#28 ((fear* or anxiet* or worry or worrie* or apprehensi* or afraid or dread* or threat* or expos* or avoid*) adj4 (professional* or formal* or external* or official*) adj4 regulat*) 0
#29 #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 22
#30 #29 OR #17 22
#31 MeSH DESCRIPTOR Professional Practice 47
#32 MeSH DESCRIPTOR Practice Patterns, Physicians' 0
#33 MeSH DESCRIPTOR Practice Patterns, Dentists' 0
#34 MeSH DESCRIPTOR Institutional Practice 1
#35 MeSH DESCRIPTOR Professional Autonomy 5
#36 #31 OR #32 OR #33 OR #34 OR #35 51
#37 #36 AND #15 0
#38 practice* adj6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 14
#39 behav* adj6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 22
#40 autonom* adj6 (legal* or liabilit* or complaint* or litigat* or claim* or lawsuit* or prosecut* or compensation* or damages or "being sued" or malpractice or negligen* or misconduct) 2
#41 (professional* or formal* or external* or official*) adj6 regulat* adj6 (practice* or behav* or autonom*) 2
#42 disciplinary adj6 (action* or measure or measures or procedure* or proceeding* or process* or sanction*) adj6 (practice* or behav* or autonom*) 0

#43 #38 OR #39 OR #40 OR #41 OR #42 39
#44 #37 OR #43 39
#45 defensive* adj3 (act or acts or action* or approach* or strateg*) 0
#46 #6 OR #30 OR #44 OR #45 62

Website searches

All website searches were conducted on 27th March, 2020. All sites were browsed for relevant research, as well as being searched as follows:

- The General Medical Council (GMC) website at https://www.gmc-uk.org/ was searched using the term “defensive”. This returned 15 items; all were exclude 1.

- The Care Quality Commission (CQC) website at https://www.cqc.org.uk/ was searched using the term "defensive". Ten items were listed; none reported the views of clinicians on defensive medicine (all exclude 1).
- The Professional Standards Authority (PSA) website at https://www.professionalstandards.org.uk/publications/research-papers was searched using the term "defensive medicine". This identified 11 articles; two were exclude 4, and the others were all exclude 1.
- The Health and Care Professions Council (HCPC) https://www.hcpc-uk.org/resources/?Query=&Categories=48 was searched using the term "defensive medicine". This identified one article, which was exclude 1.
- The General Dental Council (GDC) website at https://www.gdc-uk.org/ was searched using the term "defensive". This returned 23 results; all were exclude 1.

Reference checking

The reference lists of all 15 included studies were checked. No new studies were identified. Most references were pre-2000 or already identified by the database searches. Across all studies, 16 references were exclude 1, one was exclude 2, 14 were exclude 3, one was exclude 4, and one was in a foreign language.

The references of three systematic reviews were checked, on 23rd March. From these, 35 references were considered to be potentially relevant; 21 were identified by the database searches, seven were exclude 3, and the remaining seven were exclude 1.

Forward citation searches

Web of Science Core Collection
Clarivate analytics https://clarivate.com/
6th April 2020
142 cites

1. Assing H, Lykkegaard J, Pedersen LB, Pedersen KM, Munck A, Andersen MK. How is defensive medicine understood and experienced in a primary care setting? A qualitative focus group study among Danish general practitioners. *BMJ Open* 2017;**7**:e019851.

- 7 cites

2. Assing H, Bjornskov P, Lykkegaard J, Moller P, Andersen MK. A colonized general practice? A critical habermasian analysis of how general practitioners experience defensive medicine in their everyday working life. *Health: an Interdisciplinary Journal for the Social Study of Health, Illness & Medicine* 2019:1363459319857461.

- not in Web of Science Core Collection

3. Bradder Annette M. *Reflexivity in professional practise and the social construction of defensive medicine: a study of discourses of risk in medical practice*. Ann Arbor; 2007.

- not in Web of Science Core Collection

4. Broom A, Kirby E, Gibson AF, Post JJ, Broom J. Myth, Manners, and Medical Ritual: Defensive Medicine and the Fetish of Antibiotics. *Qual Health Res* 2017;**27**:1994-2005.

- 13 cites

5. Cunningham W, Dovey S. Defensive changes in medical practice and the complaints process: a qualitative study of New Zealand doctors. *N Z Med J* 2006;**119**:U2283.

- 12 cites

6. Hammer R. Risk of Malpractice Claims and Changes in Professional Autonomy: A Qualitative Study of Obstetrician-Gynaecologists in Switzerland. *Swiss Journal of Sociology* 2017;**43**:163.

- not in Web of Science Core Collection

7. Hindley C, Thomson AM. Intrapartum fetal monitoring and the spectre of litigation: A qualitative study of midwives' views. *Clinical Governance* 2007;**12**:233-43.

- 10 cites

8. Hood L, Fenwick J, Butt J. A story of scrutiny and fear: Australian midwives' experiences of an external review of obstetric services, being involved with litigation and the impact on clinical practice. *Midwifery* 2010;**26**:268-85.

- 33 cites

9. Manuel J, Crowe M. Clinical responsibility, accountability, and risk aversion in mental health nursing: a descriptive, qualitative study. *International Journal of Mental Health Nursing* 2014;**23**:336-43.

- 22 cites

10. Papadopoulos Daphne A. *Obstetricians' reactions to the threat of medical malpractice litigation*. 2009.

- not in Web of Science Core Collection

11. Robertson JH, Thomson AM. An exploration of the effects of clinical negligence litigation on the practice of midwives in England: A phenomenological study. *Midwifery* 2016;**33**:55-63.

- 8 cites

12. Ruston A. Risk, anxiety and defensive action: general practitioner's referral decisions for women presenting with breast problems. *Health, Risk & Society* 2004;**6**:25-38.

– 7 cites

13. Spendlove Z. Risk and boundary work in contemporary maternity care: tensions and consequences. *Health, Risk and Society* 2018;**20**:63-80.

– 2 cites

14. Surtees R. 'Everybody expects the perfect baby...and perfect labour...and so you have to protect yourself ': discourses of defence in midwifery practice in Aotearoa/New Zealand. *Nurs Inq* 2010;**17**:82-92.

– 8 cites

15. Symon A. Obstetric litigation: effects on clinical practice. *Gynakol Geburtshilfliche Rundsch* 2000;**40**:165-71.

– 2 cites

16. Symon A. Litigation and changes in professional behaviour: a qualitative appraisal. *Midwifery* 2000;**16**:15-21.

– 10 cites

17. Wier JP. Protecting the public: an investigation of midwives perceptions of regulation and the regulator. *Midwifery* 2017;**52**:57-63.

– 0 cites

APPENDIX B. RESULTS OF QES QUALITY ASSESSMENT

Table 4. Results of quality assessment

First author	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Results	Transferability or generalizability	Implications and usefulness
Assing Hvidt	Good	Good	Good	Fair	Fair	Fair	Good	Fair	Good
Bradder	Poor	Good	Good	Fair	Fair	Good	Fair	Poor	Poor
Broom	Fair	Good	Fair	Poor	Fair	Fair	Good	Poor	Poor
Cunningham	Good	Good	Fair	Fair	Fair	Fair	Fair	Poor	Fair
Hammer	Fair	Good	Fair	Poor	Fair	Fair	Good	Poor	Fair
Hindley	Good	Good	Fair	Poor	Good	Fair	Good	Poor	Good
Hood	Good	Good	Good	Fair	Fair	Good	Good	Fair	Fair
Manuel	Good	Good	Good	Poor	Good	Good	Fair	Poor	Fair
Papadopoulos	Good	Good	Good	Poor	Fair	Fair	Fair	Poor	Good
Robertson	Good	Good	Fair	Fair	Good	Good	Good	Poor	Good
Ruston	Good	Good	Good	Good	Fair	Fair	Fair	Poor	Fair
Spendlove	Fair	Good	Fair	Poor	Fair	Good	Good	Poor	Poor
Surtees	Fair	Fair	Very poor	Very poor	Very poor	Poor	Fair	Very poor	Fair
Symon	Good	Fair	Fair	Poor	Fair	Fair	Fair	Poor	Fair
Wier	Good	Good	Fair	Poor	Good	Good	Fair	Poor	Fair

APPENDIX C. QES EVIDENCE TABLES

Study ID	**Assing**
Study focus	"to identify individual and shared perspectives among GPs on how DM is understood and experienced in their daily clinical work." (p2)
Theoretical approach	Hermeneutic-phenomenological
Sampling and recruitment methods	Sampling frame: GPs in one region in Denmark. GP-researchers identified clinics and provided email addresses; unclear if the study attempted to contact all clinics. Sampling purposive for diversity in various factors. "The recruitment of new groups continued until sufficient information power regarding the subject at hand was achieved." (p3) Inclusion criteria: GPs with ≥2 years' experience [but stated ≥3 years in 2019 paper]
Location	Denmark
Setting	Primary care
Sample size	28
Population characteristics	N=14 male, N=14 female; age range 36-68 [30-69 in Table 1]; N=19 urban, N=9 rural
Data collection methods	Focus groups (1-1.25 hours, n=6 groups, n=3-8 participants each) comoderated by sociologist and GP-researcher. Semi-structured interview focusing on experiences and understandings of defensive medicine.
Data analysis methods	Thematic analysis
Limitations identified by author	NR
Limitations identified by reviewer	No major limitations

Study ID	**Bradder**
Study focus	To explore issues of risk and litigation in clinical practice
Theoretical approach	Interpretivist / constructivist; uses ideas from 'risk society' theory and social movement theory
Sampling and recruitment methods	Random sample from list of NHS doctors; 84% response rate from initial sample of n=100; sample of n=50 eventually obtained after further contact

Location	England and Wales; various locations NR
Setting	Obstetrics and gynaecology within hospitals; limited further information
Sample size	50
Population characteristics	Only given for individual interview sample (n=40), not focus group sample (n=10): n=22 male, n=18 female; n=12 house officers, n=10 registrars, n=13 consultants, n=5 retired consultants
Data collection methods	Semi-structured interviews, most individual with n=3 small focus groups; question themes included "cultural change, autonomy, risk, knowledge of the law, uncertainty, supervision, experience and knowledge, and so forth" (p118); facilitated by first author; generally on-site settings intended to be "familiar and comfortable" for participants
Data analysis methods	Thematic analysis (described as 'discourse analysis', but not what is usually meant by this term); overall framework developed around ideas of risk and control
Limitations identified by author	Data collection limited to interviews only.
Limitations identified by reviewer	Limited information on sample and context. Research question not well defined. Structure of findings arguably unclear.

Study ID	**Broom**
Study focus	To explore factors influencing doctors' use of antibiotics
Theoretical approach	Interpretivist; anthropological theories of ritual
Sampling and recruitment methods	Sampling aimed at key areas of antibiotic misuse within hospitals, and at representing different professional groups. Participants invited by email (unclear who was invited). Response rate NR.
Location	Australia
Setting	Public-sector teaching hospitals
Sample size	29
Population characteristics	n=8 senior doctors / consultants, n=13 other doctors, n=6 pharmacists, n=2 nurses [note that the Ns on p1997 sum to more than n=29; Ns here assume that there is some overlap in descriptions]. N=15 male, n=14 female.
Data collection methods	Focus groups; n=5-7 participants; 80-120 minutes. "Discussion focused on the drivers of infection management and the role of context in decision making, challenging areas of infection management and antibiotic practice on the ward, and the role of institutional structures and formalized knowledge in guiding practice." (p1997)

Data analysis methods	Thematic analysis using constant comparison
Limitations identified by author	NR
Limitations identified by reviewer	Some unclarity in sampling. Limited information on sample or context.

Study ID	**Cunningham**
Study focus	To understand how doctors change practice in response to complaints and/or the threat of complaints
Theoretical approach	NR
Sampling and recruitment methods	For the interviews (which comprise the bulk of the data), participants were invited through the Medical Protection Society selecting hospital-based specialists they had advised (but it is unclear how these individuals were selected). Response rate 25/40. Sampling guided by data saturation.
Location	New Zealand
Setting	Hospitals; no other information
Sample size	12
Population characteristics	Most specialised in surgery; no other information
Data collection methods	Individual interviews by telephone; approx. 90 mins. Interviews focused on experiences of the complaints process and changes to practice as a result
Data analysis methods	Inductive thematic analysis
Limitations identified by author	Self-report data only
Limitations identified by reviewer	Some unclarity in sampling. Limited information on sample or context. Findings are brief and not very in-depth.

Study ID	**Hammer**
Study focus	To examine how obstetrician-gynaecologists perceive and respond to the risk of malpractice claims

Theoretical approach	Interactionist
Sampling and recruitment methods	Two samples. 1) Doctors in private practice "were selected using a simple random selection from the official directory of private obstetrician-gynaecologists. Six of them were recruited thanks to personal contacts." (p168) Unclear whether the personal contacts were in addition to the random sample. Response rate NR. 2) Doctors in hospital were recruited via link clinician. No further information on sampling or recruitment for this sample.
Location	Switzerland (French-speaking part)
Setting	Private practice + a maternity hospital in a large town
Sample size	26
Population characteristics	Obstetrician-gynaecologists; n=14 female, n=12 male; n=18 in private practice, n=8 in hospital; mean age 48; mean years practiced in field 13.6
Data collection methods	Individual face-to-face semi-structured interviews; mean ~70 mins. Interview schedule focused on participants' views of their professional activity; risk disclosure; and the medico-legal context
Data analysis methods	Mixed theoretical and thematic coding
Limitations identified by author	Small sample size; hospital sample all at single institution; not longitudinal data
Limitations identified by reviewer	Some unclarity in sampling and recruitment

Study ID	**Hindley**
Study focus	To explore midwives' views and experiences of fetal intrapartum monitoring; this analysis focuses specifically on defensive practice and fear of litigation
Theoretical approach	NR
Sampling and recruitment methods	Sampling purposive for a range of experience in fetal monitoring. Very limited information on sampling or recruitment process other than "permission was sought and gained for the researchers to gain access to the clinical areas" (p235). Response rate NR.
Location	Northern England
Setting	NHS hospitals
Sample size	58

Population characteristics	Midwives. Years of practice range 2-30; "an equal mix of registered nurse (RN) prepared midwives with registered midwives who did not have RN status" (p235); no further information
Data collection methods	Semi-structured interviews conducted by two midwifery researchers. Themes focused on views and experiences of fetal monitoring; themes reported here derive specifically from questions on "the effects of unit guidelines on fetal monitoring practices and the unit philosophy of care around birth" (p235)
Data analysis methods	Thematic content analysis, partly based on framework in interview schedule. N=20 randomly selected transcripts were reviewed by another researcher for validation.
Limitations identified by author	Only two sites and results may not be generalisable.
Limitations identified by reviewer	Sampling unclear and limited information on sample or context.

Study ID	**Hood**
Study focus	To explore midwives' experiences and views of external scrutiny and medico-legal proceedings, and their impacts on practice and personal wellbeing
Theoretical approach	NR
Sampling and recruitment methods	Snowball sampling based on key informants working at selected site; also posters and in-service sessions; response rate 16/17
Location	Australia
Setting	A 250-bed teaching hospital specialising in obstetrics, gynaecology and midwifery
Sample size	16
Population characteristics	Midwives. Age range 24-55; years of experience 0-30; n=11 qualified in Australia, n=5 overseas. No further information
Data collection methods	Individual face-to-face interviews (45-140 mins). Questions focused on experiences of working during external review process and then broader questions around litigation and clinical practice.
Data analysis methods	Thematic analysis guided by thematic saturation
Limitations identified by author	NR

Limitations identified by reviewer	No major limitations. Only part of the data is relevant to this review.

Study ID	**Manuel**
Study focus	To explore questions of responsibility, accountability and organisational defensiveness from the point of view of mental health nursing
Theoretical approach	Interpretivism
Sampling and recruitment methods	Described as "convenience" sample. Recruited via advertisements in clinical sites. Inclusion criterion: registered nurses. No other information.
Location	Canterbury, New Zealand
Setting	Mental health ("acute, youth, and rehabilitation inpatient mental health wards, as well as youth and adult community mental health services" p338)
Sample size	10
Population characteristics	Mental health nurses; no other information
Data collection methods	Semi-structured interviews; 40-60 minutes. Questions focused on understanding and experience of clinical responsibility.
Data analysis methods	Thematic analysis
Limitations identified by author	Possible selection bias; one study site only; researcher's professional identity may have influenced findings [unclear what is meant by this]
Limitations identified by reviewer	Very little information on sampling, sample or context. Interview themes and findings are high-level and the relation to practice is not always clear. Not all the data are relevant to this review.

Study ID	**Papadopoulos (2009)**
Study focus	To explore obstetrician-gynaecologists' reactions to the threat of malpractice litigation
Theoretical approach	Interpretive Phenomenological Analysis
Sampling and recruitment methods	Aims of sampling may have been to obtain diversity in experience of litigation and years of experience, although this is not entirely clear. Recruitment by letter (unclear how recipients were identified). Response rate NR.
Location	Boston area, USA

Setting	Obstetrics/gynaecology; community and hospital care
Sample size	15
Population characteristics	N=8 male, n=7 female; n=11 community practice, n=4 hospitals; n=11 had experience of being named in litigation; mean age 43 (range 30-61); mean years in practice 13 (range 1-35)
Data collection methods	Semi-structured individual face-to-face interview. Interview questions focused on general concerns about professional liability, and for those with experience of litigation, more in-depth questions about their experiences and the impacts of these
Data analysis methods	Thematic analysis using Interpretive Phenomenological Analysis
Limitations identified by author	Low sample size; homogeneous sample; self-report data only; possible social desirability bias; results may be biased towards participants with strong views on the issue; possible leading questions in interview guide
Limitations identified by reviewer	Some unclarity in sampling. The presentation of data is somewhat superficial. Only part of the findings are relevant to this review.

Study ID	**Robertson**
Study focus	To explore the impact on midwifery practice of involvement in litigation
Theoretical approach	Husserlian phenomenology
Sampling and recruitment methods	Purposive sampling to identify midwives with experience of being subject to negligence allegations. Sampling guided by data saturation. Participants were recruited through clinical and legal informants, networking and a notice in a professional journal (unclear how these were selected). Response rate NR.
Location	England (several regions)
Setting	Midwifery; no further information
Sample size	22
Population characteristics	All female; mean time in practice 19.8 years; n=2 retired, n=1 had left midwifery
Data collection methods	Open-ended interviews; prompts focused on the personal experience of litigation and impacts on clinical practice
Data analysis methods	Thematic analysis using "descriptive phenomenological, psychological method"; random sample of records reviewed by academic supervisors
Limitations identified by author	Purposive and self-selected sample means that findings may not be generalisable to the whole population.

Limitations identified by reviewer	No major limitations

Study ID	**Ruston**
Study focus	To understand GPs' referral decisions for women with breast problems
Theoretical approach	NR
Sampling and recruitment methods	Sampling site chosen for high incidence of breast cancer. Sampling frame was four specialist clinics in sampled Health Authority area. Patients were recruited quasi-randomly from appointment lists at each site until n=25 were recruited from each site. For each patient, the referring GP was then contacted. Response rate for GP sample 85/98.
Location	UK (location NR)
Setting	Primary care
Sample size	85
Population characteristics	GPs. N=49 male, n=36 female; n=4 <1 year in practice, n=41 1-10 years, n=24 11-20 years, n=14 21-30 years, n=2 >30 years
Data collection methods	Semi-structured individual interviews; interview themes focused on patient presentation and motivations to refer, as well as open-ended questions
Data analysis methods	Data from each GP-patient dyad combined and analysed using constant comparison; initial sample coded by one researcher and then re-coded by another independently
Limitations identified by author	NR
Limitations identified by reviewer	No major limitations

Study ID	**Spendlove**
Study focus	To explore midwives' and obstetricians' experiences of risk
Theoretical approach	Interpretive approach informed by concepts of 'risk work'
Sampling and recruitment methods	For interviews (participant observation is also reported but most of the data appear to come from the interviews): purposive sampling for mixed levels of experience (although unclear how this was carried out, or whether it was attained); recruitment via worksite; response rate NR; all clinicians who volunteered were included in sample.

Location	central England
Setting	NHS obstetric-led maternity services department
Sample size	37 (for interviews)
Population characteristics	n=21 midwives, n=16 obstetricians; no further information
Data collection methods	Individual semi-structured interviews in research office, 35-91 min; no information on interview topics or focus
Data analysis methods	Thematic coding using constant comparison method
Limitations identified by author	NR
Limitations identified by reviewer	Some unclarity on sampling and recruitment. Findings are fairly abstract and high-level.

Study ID	**Surtees**
Study focus	Study aim was "to analyse the actions between women and midwives that constitute midwifery partnerships" (abstract), but this report appears to be narrower in focus
Theoretical approach	poststructuralism; Foucauldian discourse analysis
Sampling and recruitment methods	NR
Location	New Zealand ("a main city")
Setting	NR
Sample size	40
Population characteristics	Midwives; no further information
Data collection methods	"interviewing and observations"; no further information
Data analysis methods	NR
Limitations identified by author	NR
Limitations identified by reviewer	Limited information about methods, context or sample. Reporting mixes together findings and discussion. Unclear how far defensive practice was an *a priori* focus, or a theme which emerged in analysis.

Study ID	**Symon**
Study focus	To explore the views of midwives, obstetricians and other stakeholders regarding defensive practice
Theoretical approach	Hermeneutics / phenomenology
Sampling and recruitment methods	Sampling and recruitment were based on a prior survey phase (which is not considered here as it did not produce qualitative data). This included a large-scale postal survey sampling from registries of practitioners and specific sites (rationale for the latter is NR). Interviewees were selected from survey respondents who had indicated willingness to participate; the sampling is stated to be purposive for diversity, but unclear how this worked in practice, or what principles guided the selection of respondents. Response rate "low" for the survey phase, otherwise NR; 100% for those who were invited to participate in interviews. (There was also a non-clinical sample which is not considered here; methods for this are NR.)
Location	UK (mainly Scotland)
Setting	Obstetrics/midwifery; no further information
Sample size	23 (clinicians; 7 non-clinicians)
Population characteristics	n=17 midwives, n=5 obstetricians, n=1 neonatologist; "some had direct experience of litigation"; no further information. (Also 7 non-clinician participants; data not extracted)
Data collection methods	Individual semi-structured interviews in participants' workplaces or homes. Initial question concerned beliefs about the extent of litigation; further questions were based on the survey but NR explicitly.
Data analysis methods	Thematic analysis; conducted by single researcher
Limitations identified by author	Small sample size; non-representative sample; may not be generalisable to other countries; low response rate to survey; possible selection bias due to fear of disclosure
Limitations identified by reviewer	Limited information on sample or context. Findings are rather broad and shallow.

Study ID	**Wier**
Study focus	To explore midwives' perceptions of the influence of the Nursing and Midwifery Council on practice
Theoretical approach	Socio-legal studies

Sampling and recruitment methods	Sampling based on an online survey; sampling procedures for this phase are unclear. Participants in the survey were asked to indicate willingness to participate in an interview; sampling of these individuals unclear. There was also snowballing based on this initial sample. Sampling was purposive for diversity (with respect to NHS vs independent practice; length of experience; supervisory role vs not), and reviewed after the initial phase of data collection.
Location	SE England
Setting	Midwifery (NHS and private); no further information
Sample size	20
Population characteristics	Midwives; included with and without management experience (but numbers NR)
Data collection methods	Semi-structured individual interviews (40-90 mins); themes NR
Data analysis methods	Thematic analysis
Limitations identified by author	Small sample size; possible selection bias
Limitations identified by reviewer	Limited information on sample or context. The a priori focus is on the regulator rather than on defensive practice, although this emerged as a major theme.

APPENDIX D. PAPERS INCLUDED IN THE SYSTEMS-BASED LOGIC MODEL

1. ANANT, J. & ANDREW, P. 2018. “More than my job is worth” – defensive medicine and the marketisation of healthcare. Marketisation, Ethics and Healthcare. *Policy, Practice and Moral Formation*. Routledge.
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13. LEONARD, B. 2017. *Medical errors, malpractice, and defensive medicine: an ill-fated triad*. 4, 133-139.
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15. NOLA, M. R. 2017. Choosing Wisely: Law's Contribution as a Cause of and a Cure for Unwise Healthcare Choices. *Journal Of Law And Medicine*, 25, 210-228.
16. ORTASHI, O., VIRDEE, J., HASSAN, R., MUTRYNOWSKI, T. & ABU-ZIDAN, F. 2013. The practice of defensive medicine among hospital doctors in the United Kingdom. *BMC medical ethics*, 14, 1-6.
17. RICHARD, M., ANITA, A. & JUDY, T. 2008. Defensive practice in mental health. *The New Zealand Medical Journal*, 121, 85-91.
18. SAIF, M. B., LANIEL, R., SALEH, R. & ABDO, A. 2020. Internal Medicine Residents and the Practice of Defensive Medicine: A Pilot Study Across Three Internal Medicine Residency Programs. *Cureus*, 12.
19. SANDRO, V., FRANCESCA, C. & ALFREDO, V. 2018. Defensive medicine: It is time to finally slow down an epidemic. *World Journal Of Clinical Cases*, 6, 406-409.
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Email: ioe.ssru@ucl.ac.uk
Telephone: +44 (0)20 7331 5263