

**The development of practical wisdom among training doctors:
key internal and external influences**

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Acknowledgements

My interest in complex decision making is sparked by numerous patients who have challenged me to look beyond the obvious and be creative in managing their situation. Another source of fascination is seeing some of the students and doctors who I have supervised subsequently blossom and wonder what the key ingredients are. These two areas of interest have come together in providing the idea for this study.

The study has taken place over a long period of time and I am very grateful to a number of key people who have supported me. My two supervisors, David Leat and Jane Stewart have been extremely generous in their time and ideas, shaping, suggesting and tweaking the direction of the study. Their knowledge and skills in their respective areas has added hugely to my own education and the quality of this work. I am very grateful also to Roger Barton and Richard Thomson for encouraging me and supporting me in deciding to embark on this project.

I have worked with some wonderful mentors who are not necessarily aware of their role in helping my development. Clive Griffith first opened my eyes and fuelled my interest in the field of cancer, communication and palliative care. My first taste of Palliative Care was with Lindsay Crack and Kath Mannix who showed me the scope of what can be done when science, creativity and passion are combined. Perhaps the two people who have had the biggest influence on my career are John Smith and Bee Wee. John showed me what a combination of dedication, vision, resilience, tenacity and humanity could achieve. Bee introduced me to education and leadership as career paths alongside clinical work and her energy, encouragement and mentoring has been incredibly important to my own development.

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Abstract

Background

Good judgement and the ability to make complex decisions are key attributes of a skilled professional. The study aims were to understand how training doctors develop practical wisdom through investigating their approach to difficult decision making, understanding the influences on the development of these skills, and identifying potential interventions that may help develop these skills further. The background literature explores current understanding of professional development and clinical thinking frameworks.

Methodology

The study adopted an approach of social constructivism, constructing an understanding of the process of developing practical wisdom. The study investigated training doctors at different stages of their career. Qualitative interviews were used to explore the approaches doctors take to difficult decision making as well as the key training influences in learning these skills.

Results

Thematic data analysis has led to the construction of a conceptual model which sets out the development of practical wisdom among training doctors. This model describes a process of gaining experience in decision making, moderated by key external and internal influences. The important roles of self-efficacy, agency (relational) and structure are highlighted as key enablers of this process.

Discussion

There has been limited study of doctors and their decision making, particularly in relation to complex decisions. The implications of this model are considered in relation to postgraduate training of doctors. The importance of training doctors as self-regulated learners in learning environments that support their development is highlighted. Aspects of the clinical learning environment (structure) such as rotation structures, the culture, supervision and feedback can all be enhanced. Self-efficacy and relational agency, alongside other internal influences, are key factors in accelerating development of practical wisdom that can be improved with targeted interventions.

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Chapter 1. Background

This study seeks to understand the development of “wise” decision making during the training of Consultants (specialist training) and General Practitioners, and the influences on that process. Specifically it explores the process of complex medical decision making, in order to understand how training doctors acquire “practical wisdom”. This chapter sets the context of the thesis, the importance of the subject and current thinking in this area. In particular, I will seek to clarify the particular focus of study; define the process that is being looked at and the terminology being used; describe current thinking on professional development and medical training in order to set the context in which this piece of research takes place. Chapter 2 sets out the methodology, chapters 3, 4 and 5 analyse the data from my investigation, chapters 6 and 7 discuss the implications of the data before concluding in chapter 8.

Good judgement and the ability to make complex decisions are the key attributes of a skilled professional. In healthcare they are crucial in delivering high quality care that is safe, patient focussed, individualised and ethical. Every day, the public trusts and relies on those judgements being correct for their own wellbeing. High profile cases regularly feature in the media where patients have suffered because something has gone wrong in that process, because of possible flaws in the healthcare professional’s character, values, assessment skills, judgement, decision making etc. There has been a progressive increase in the number of doctors whose conduct is being looked at by regulatory bodies related to these areas (GMC 2014).

Complex clinical decisions (those that require assimilation of information, critical thinking, weighing up of evidence and options, leading to a final judgement) are predominately taken by senior doctors- General Practitioners in primary (community) care and Consultants in secondary care (hospitals). The ability to make complex decisions and wise judgements is at the heart of good medical practice (Fish and de Cossart, 2006) and often marks out successful doctors from others. The word “wise” will be explored in more depth later but refers to decisions that are well thought out , seeing the whole picture of a situation). These skills are developed over a career, but particularly during the initial intense training period after graduation when junior doctors train while working as doctors, to become either General Practitioners or Consultants. This aspect of training is the focus of the research.

This chapter presents a review of the literature on complex decision making and professional practice. It has been carried out in a number of ways: a database search (see appendix 1 for terms used), a snowballing process from key articles and books, recommendations from my supervisory team and a manual search through key journals, Medical Education and Clinical Teacher. The topics covered in my thesis are broad (primary research as well as conceptual thinking), and the literature discussion that follows is a summary of the key strands of thinking in these areas.

1.1 Professional Practice

An important starting point is to consider the nature of being in a profession and the key features that distinguish it. Being part of a profession is characterised by the undertaking of specialist education and on-going training, subscribing to an agreed code of conduct maintained through professional bodies, and often working with a degree of autonomy in intellectually challenging work in order to deliver a particular service (Brown, 1992, p.19, Jackson, 2010, pp.23-24). This definition features some distinct components: training, regulation and the type of work involved. In medicine, there is significant emphasis on autonomy and independence, working in the best interests of patients, all underpinned by self-regulation to ensure high standards of training, conduct and care (World Medical Association, 2009). In my research, the aspect of particular interest is how people reach the stage of being able to work independently, in other words trying to understand the process, and some of the influences on that process.

It is important to focus on theoretical models of professional practice in order to describe what it involves and how individuals get to that point. There are a number of strands of thinking on what makes professional practice stand out from other forms of practice. Schon (1983) describes professional practice as involving the individual deciding what is best in the particular situation that they find themselves, rather than necessarily finding a single “right” answer. This description is important, in emphasising the significance of situational decision making, decision making that is individualised to the circumstances. It fits with my own view of difficult clinical decision making and the importance of individualising decisions. Professionals deal with problems that are complex and so a single “right” answer may not exist. There may be several feasible options, and the individual circumstances will shape what the most appropriate solution is. This ideal solution might change if there is a change in any of the individual variables, and the ability to deal with this complexity is at the heart of

clinical practice (Stewart, 2008). The importance of deliberation around the problem is a key underpinning process in working through the best course of action, and Schon (1983) would consider that deliberation is the hallmark of being a professional.

In contrast, another important school of thought is that a professional expert works almost intuitively. Dreyfus and Dreyfus (1986) describe a model of skills acquisition. The main emphasis of this model is on the acquisition of skills through learning from experience, building on previous experiences and thinking about what to do. By the final stage, the skills have become almost intuitive without the need for significant deliberation. Deliberation is needed only where a new situation is encountered or if problems occur. In this model, analysis of problems is something that is rarely evident in everyday behaviour. While recognising components of this model, I do not fully agree with or recognise the description of the expert. In everyday clinical situations, there are complexities occurring that require deliberation, consideration of the options and challenging decisions, more evident than in the Dreyfus descriptions (Dreyfus and Dreyfus, 1986).

The authors have developed a model of expertise based on a world view that the key to developing is less about knowing lots of factual detail and instead about understanding how to navigate through situations. There is particular emphasis on perceptions and decision making. They describe five levels of skills acquisition:

Level 1	Novice	rigid adherence to taught rules, little situational perception, no discretionary judgement
Level 2	Advanced Beginner	guidelines for action based on attributes or aspects, situational perception still limited, all attributes and aspects are treated separately and given equal importance
Level 3	Competent	coping with crowdedness, now sees action at least partially in terms of longer-term goals, conscious deliberate planning, standardise and routinized procedures
Level 4	Proficient	see situations holistically rather than in terms of aspects, see what is most important in a situation, perceives deviations from the normal pattern, decision making less laboured, uses maxims for guidance, whose meaning varies according to the situation
Level 5	Expert	no longer relies on rules, guidelines or maxims, intuitive grasp of situations based on deep tacit understanding, analytic approaches used only in novel situation or when problems occur, vision of what is possible

Table 1.1 Levels of Skills Acquisition

Professionals move through these levels progressively as they develop their professional expertise. The potential problem of the opposing stances seen in the work of Dreyfus and Schon is that professional behaviour seems to exhibit both intuitive actions and deliberation at different times. Hammond (1980) brought this idea together with a Continuum Theory which suggests that analytic and intuitive thinking are at two ends of a continuum, with the majority of thinking occurring somewhere in between. Where it lies will depend on the complexity of the task, the nature of the content of the task and the way in which the task presents itself. I think this is pragmatic and more realistic than either position described.

Eraut (1994) also discusses the role of different types of thinking: intuitive with the role of memory to develop and refine expertise over time; or analytic approaches (eg. logical argument, decision analysis), and the role of deliberation. He argues that the most effective reasoning will take place when the mode of thinking adopted is matched to the task. Time pressures may dictate that a more intuitive form of thinking is used, but that an expert professional in the right circumstances will switch to more deliberative decision making. While acknowledging that pressures of time on professionals and literature suggesting that intuitive and analytical approaches may be used more frequently, he strongly believes that deliberation lies at the heart of professional working. He makes a number of persuasive arguments to back this up:

1. Many professionals work on individual projects for a period of time. Intuition and analytical thinking will be important but without deliberation to stop and think, time will be wasted.
2. Many professionals carry out work where the majority is routine and so can be handled intuitively but there will always be situations where something unexpected occurs. There is a danger of professionals missing this cue when under pressure. There will also be more obviously complex cases which require deliberation. It is the ability to cope with difficult, ill-defined problems rather than only routine matters which is often adjudged to be the essence of professional expertise.

3. Strategic thinking is crucial for professionals involved in organisational development where judgement and the weighing up of differing issues are crucial.
4. Team working and consultation: where groups of people are brought together, individuals need to consider other viewpoints, think through and reflect on particular issues. The downside of this is that it can mean decision making takes much longer. Professionals also have to work with clients and if they are consulting over how to manage a situation, deliberation will be important if the client's input is also important.
5. Professionals who only use intuition and routinized behaviour are liable to make mistakes of judgement, and allow their practises to become out of date. There is a need for professionals to regularly reflect, self-evaluate and learn from colleagues even in routine cases. This is partly lifelong learning, as well as understanding one's own fallibility.

In my thinking, I regard the arguments of Eraut as being persuasive, resonating with my experiences of the working environment. I think there is a balance of both almost intuitive decision making taking place a lot of the time coupled with difficult decision making requiring consideration of the wider circumstances, individual and team issues that impact on the decision choices. Fish and Coles (1998, pp. 279-285) build on these ideas, describing four kinds of professional judgement: intuitive, strategic judgement, reflective judgement and deliberative judgement along a spectrum, depending on the decision being made.

My interest in this study is in wise decision making. The intuitive type decision making is crucial in everyday healthcare, but in this study I am going to focus on the decision making that requires deliberation, reflection and may be strategic. This could be considered one of the most important parts of clinical leadership and being a highly skilled professional. Recognising when the situation requires a change of approach from automatic, intuitive decision making is of fundamental importance in complex situations. In those circumstances, the ability to recognise the moment, think, consult and deliberate comes to the fore.

1.2 Deliberation

Before looking in more detail at the field of medicine, it is important to define what is meant by “deliberation” as it seems to be a key attribute of making wise judgements.

Deliberation is a process that involves seeing a whole picture of multiple alternatives to a given problem and working through to the right decision in this particular circumstance. Eraut (1994) considers deliberation to consist of processes such as planning, problem-solving, analysing, evaluating and decision making. It combines theoretical and practical knowledge with knowledge of the situation and skills of judgement. In deliberating, there is usually not a single answer, often with uncertainty about outcomes. Two types of information are required: knowledge of the context/ situation/ problem, and conceptions of practical courses of action/ decision options. In order to analyse and interpret a situation, professionals also need to know the perspectives and priorities of clients, co-professional and other interested parties. Some of this may be clear-cut, but one of the most challenging and creative parts of the information gathering processes is finding out how other people view the situation. A range of decision options needs to be formed which requires knowledge (making sure this is up to date) and creativity to think about alternative options. There then follows an interactive consideration of interpretations of the situation together with possible actions, reaching a professional judgement. This requires a combination of divergent and convergent thinking, the ability to focus on detail while looking at the big picture and thinking creatively. This may be difficult for an individual to combine all of this but teamwork, supervision and a good learning environment can help in the co-construction of judgement.

1.3 Decision making

In the next sections I am going to explore decision making models, starting with Aristotle. Aristotle set out three main forms of human action: *theoria* (observing and understanding), *poiesis* (the technical expertise required to achieve an outcome through rational thought) and *praxis* (Carr 2006). *Praxis* is geared towards achieving an end which is not a specific product as in *poiesis*, but towards an “understanding of what is needed for the development of a morally worthwhile form of human life”. In healthcare this might be about making decisions that achieve the most “good”. In complex situations it may not simply be about treating a heart problem with the latest evidence, but treating the individual taking into account the evidence but tailoring treatment to the

individual's circumstances and values. It is a process of finding out what the best thing to do is, and being able to apply it in different circumstances. Praxis is very similar in concept to the elements of professional working that Eraut describes when he considers deliberation and is the area that I am seeking to understand. Praxis and deliberation are at the heart of individualising clinical decision making when there may be a range of options or uncertainty over the best course of action.

Phronesis or practical judgement/wisdom refers to the judgement used in deciding the best overall actions, rather than specific acts. Knowledge, wisdom and intellect are all related to phronesis but subtly different (Carr 2006). Knowledge is something that can be learned and taught, intellect is the capacity to grasp sources of knowledge and truth and interpret them, wisdom is a combination of knowledge and intellect. Phronesis builds on wisdom, using skilled deliberation about non-factual aspects, using inquiry and reasoning. Aristotle regarded all these virtues as being important:

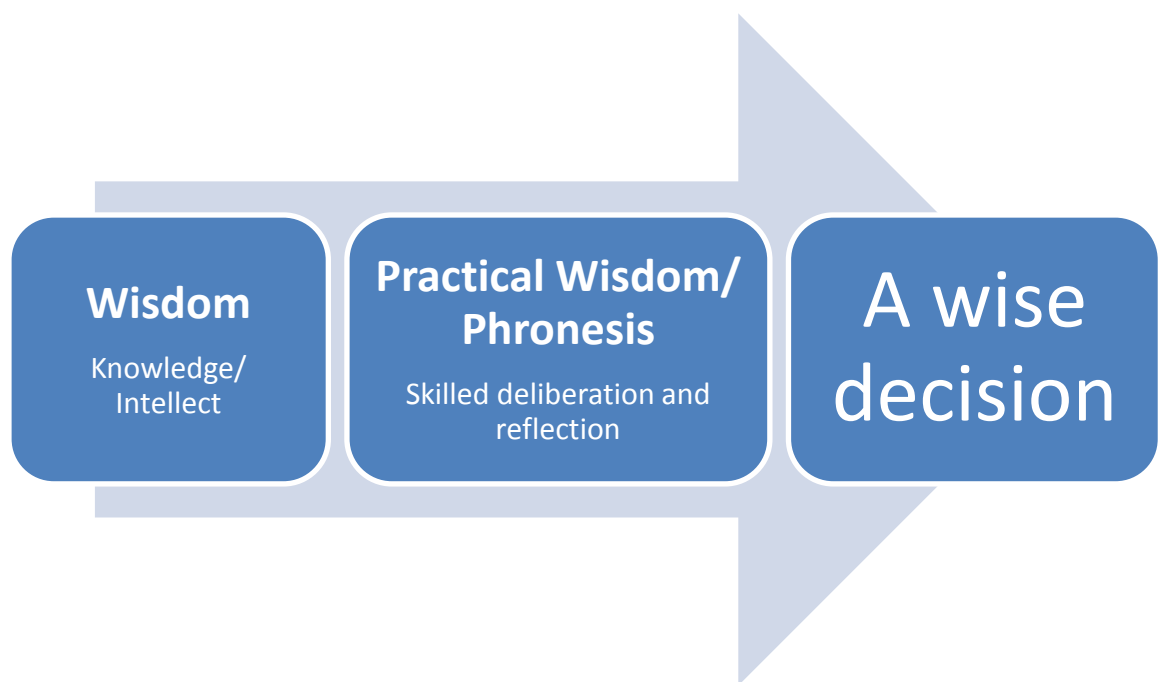


Figure 1.1 Wisdom, practical wisdom and wise decisions

Carr (2006) describes phronesis as a form of reasoning that can only be acquired by practitioners “who, in seeking to achieve the standards of excellence inherent in their practice, develop the capacity to make wise and prudent judgements about what, in a particular situation, would constitute an appropriate expression of the good”. It is a form of ethical reasoning which incorporates deliberation (of the means and ends of a decision), reflection (the means are modified by reflecting on the ends and vice versa)

and judgement (the outcome of a reasoned decision about what to do in a particular situation). Crucially it involves both deliberation and making a judgement to the decision that ought to be made in this set of circumstances.

The reason for starting with Aristotle is that his descriptions of thinking and reasoning help frame a debate that is still going on centuries later, the role of deliberation, intuition and virtue in professional decision making. Some of the challenges in trying to apply his work to current thinking are significant changes to societal structure, the untested assumption in his work of people acting for the benefit of others, a paternalistic view of society and distinctions between types of thinking which can seem arbitrary. The importance of his work is that much of the thinking that follows and the definitions used are based on his terminology and thinking. Of particular use in my research is trying to separate out knowledge and intellect from practical wisdom. In framing my research looking at complex decision making, the focus is not on subject knowledge or treatment options. Instead, it is on situations where there is uncertainty and judgements to be made, captured by the concept of “practical wisdom”.

1.4 Professional expertise and decision making in medicine

Before considering the literature on medical training, the figure below illustrates the current training structure:

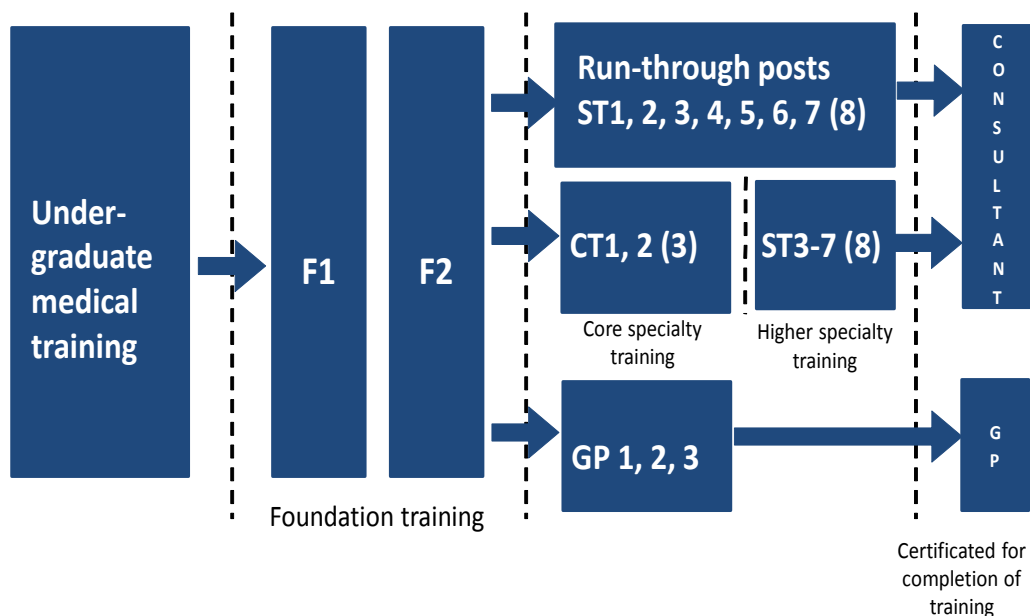


Figure 1.2 Clinical training structure

On graduating from medical school and qualifying as a doctor, individuals carry out a two year foundation programme in a range of hospital and community posts before embarking on further training in their chosen clinical area.

There are a number of contrasting models in the medical literature looking at skills development. There has been considerable focus on diagnostic decision making, which may require a slightly different set of skills to decision making about managing a patient.

One such model proposes 4 stages of developing clinical expertise (Schmidt 1990). Here memory is the main difference in diagnostic performance between medical students, training doctors and experts. Building up important knowledge structures is the key to the functioning of that memory. The 4 stages are:

1: Developing causal networks to link the underlying pathophysiology of conditions with the cause or problems associated with that condition. This is the stage that junior medical students are at.

2: Transformation of these causal networks into more concise networks where they can be organised under different labels or headings. This requires higher level thinking.

3: This stage sees the organisation of knowledge about illness into a template known as an “illness script”. This template starts to look at temporal relationships as well as causal, and develops the information in a more narrative structure. This stage takes longer to reach and is dependent on accumulating experience.

4: Memories of individual patients start to play a role here. They do not get organised into specific templates but remain as individual cases.

As doctors progress through the stages they use the initial ones less but can access them when needed. The problem with models setting out stages such as this is that clinical training seldom takes place in a linear fashion. The authors describe stages one and two as taking place at medical school before the latter stages take place in training. This model perhaps does not capture the variation in ability or progress seen in individuals. However the model is mainly about diagnosis; and reaching stage four fits with much of the literature around the importance of pattern recognition in most diagnostic situations.

Similar models are also found in the literature around treatment decision making. One study looking at the decisions/ expertise about deciding on the correct dose of medication found that decision making was based on a series of statements/ rules setting out what to do in particular circumstances- this had evolved from professional experience over several years (Boreham, 1989). The decision making was modified by theory and the patient context. It was also progressive and evolving, making an initial plan, seeing the consequences, and evolving the personal rules of decision making. Interacting with patients and new research evidence led to the need to adjust these rules. Crucially the rules that were used to determine individual management were able to change with time, based on new knowledge, new investigations, new treatments as well as patient factors and challenges to the rules that they might bring. This model fits more with an evolving decision making model, but it does not fully capture the complexity and uncertainty of individualised decision making.

Lilford (1992) considers the role of decision analysis in decision making. It involves looking at possible outcomes and working out their respective probabilities. This sort of model is dependent upon the reliability of probability estimates, contextual information about a particular case and the individual preferences of a patient which may follow a completely different set of rules. He suggests 3 areas of expertise:

- to draw up a decision analysis based on up to date information about conditions
- the ability to use research knowledge and interpretation to make appropriate adjustments of probability for a specific patient
- the ability to interact with a patient, and present this information without unduly influencing them.

The difficulty with this model is how applicable research evidence and probabilities are to individual cases and therefore how to interpret such data when interacting with the patient. Most of the models described in the medical literature are around largely straightforward decision making which does not sufficiently capture the complexity of decision making. This is a particular problem when managing challenging individual cases. Evidence needs to be applied from a population level to something meaningful about an individual patient, or the individual may differ significantly from the research population, which can make it harder to compare evidence.

The tension around the nature of professional expertise described previously is echoed within the medical profession. In trying to raise standards and consistency, there is an increasing emphasis on the use of protocols and evidence-based practice, which is consistent with a more intuitive approach to professional working. Coles (2002) challenges where these two components fit in medical decision making, acknowledging that there are situations where a protocol with a clear evidence base is valuable, for example an emergency where prompt and standardised action is required. However he argues strongly, backing the stance taken by Eraut that being professional starts when protocols no longer help. A protocol might suggest one course of action but a true professional may decide to take another action or maybe do nothing at all because the individual circumstances of the situation suggest that to be a better plan in this particular situation.

Epstein (1999) also emphasises the importance of evidence and guidelines, but supports the view that in the work of medical professionals there is much more that is less easy to identify. In his view, medical decision making is often presented as the conscious application to the patient's problem of explicitly defined rules and objectively verifiable data. Seasoned practitioners also apply to their practice a large body of knowledge, skills, values and experiences that are not explicitly stated by or known to them. While explicit elements of practice are taught formally, tacit elements are usually learned during observation and practice. One of the major challenges of investigating this area of medicine is that excellent clinicians are often unable to articulate a range of factors that influence what they do. Epstein builds in experience, the individual issues of the patient, and the tacit elements, resonating with my own clinical experience in this field.

In his work looking at several different professions Eraut (1994) also considers the medical profession and discusses whether the process of diagnosis and management is skilful behaviour or deliberative action. I support his belief that the model of the Dreyfuses emphasising skilful behaviour does not fully take into account how people learn from experience. He acknowledges traditional approaches to diagnosis, requiring knowledge of diseases and their symptoms and the skill of clinical reasoning. However he has found that clinical reasoning skills do not change significantly from the time of qualification through postgraduate training and working as a specialist and that research shows that propositional knowledge about diseases, symptoms and treatments reaches a plateau at the time of specialist qualification. If decision making was purely about these

two components it would not change significantly more after this peak early in a career, but evidence suggests it continues to develop with greater experience. This means that any successful understanding of the development of complex clinical decision making relies on a model that allows for knowledge, building experience and the influence of that on decision making, alongside the process of deliberation and reflection. Getting to the heart of this understanding is a key element of my research.

There have been attempts more recently to review the literature on decision making and judgement but these have struggled because of the difficulties of definition and the diversity of backgrounds of researchers and perspectives they bring to this area (Norman 2005). Additionally, much of everyday decision making uses tacit cognitive processes which by their nature are hard to investigate (Eva 2005). These processes are often rapid, and clinicians find it difficult to break them down and articulate them to others (Bargh and Chartrand, 1999).

Most of the research about reasoning is based around diagnosis, rather than the management of patients. Decision analysis as outlined above does focus on management but this is on mathematical models which do not fully capture the medical, psychological and social variables I want to capture. In the diagnostic literature, reasoning is considered in two ways: analytic (conscious/ controlled) and non-analytic (unconscious/ automatic) processes (Eva 2005). Analytic processes are based on working out the rules that link particular features of a case to categories, for example a series of clinical features present must mean a particular diagnosis. Non-analytic processes are based more on pattern recognition, coming across a situation which has been experienced before, and using that prior experience to shape the current situation. It is proposed that more inexperienced doctors will rely on analytic processes, and with greater experience will use more non-analytic processes (Eva 2005).

The literature on medical decision making is sparse, and mainly focusses on reaching a diagnosis. There is a large gap on management decision making, and especially management of complexity.

1.5 Complex clinical decision making

Fish and Coles (1998) build on some of the work of Aristotle and Eraut in particular. They describe the importance of complex decision making leading to sound

professional judgement and actions considered as “practical wisdom”. This ability to work amid uncertainty and complexity is important to good medical practice.

Fish and de Cossart (2007) set out a model of complex decision making. In this there are considered several key elements:

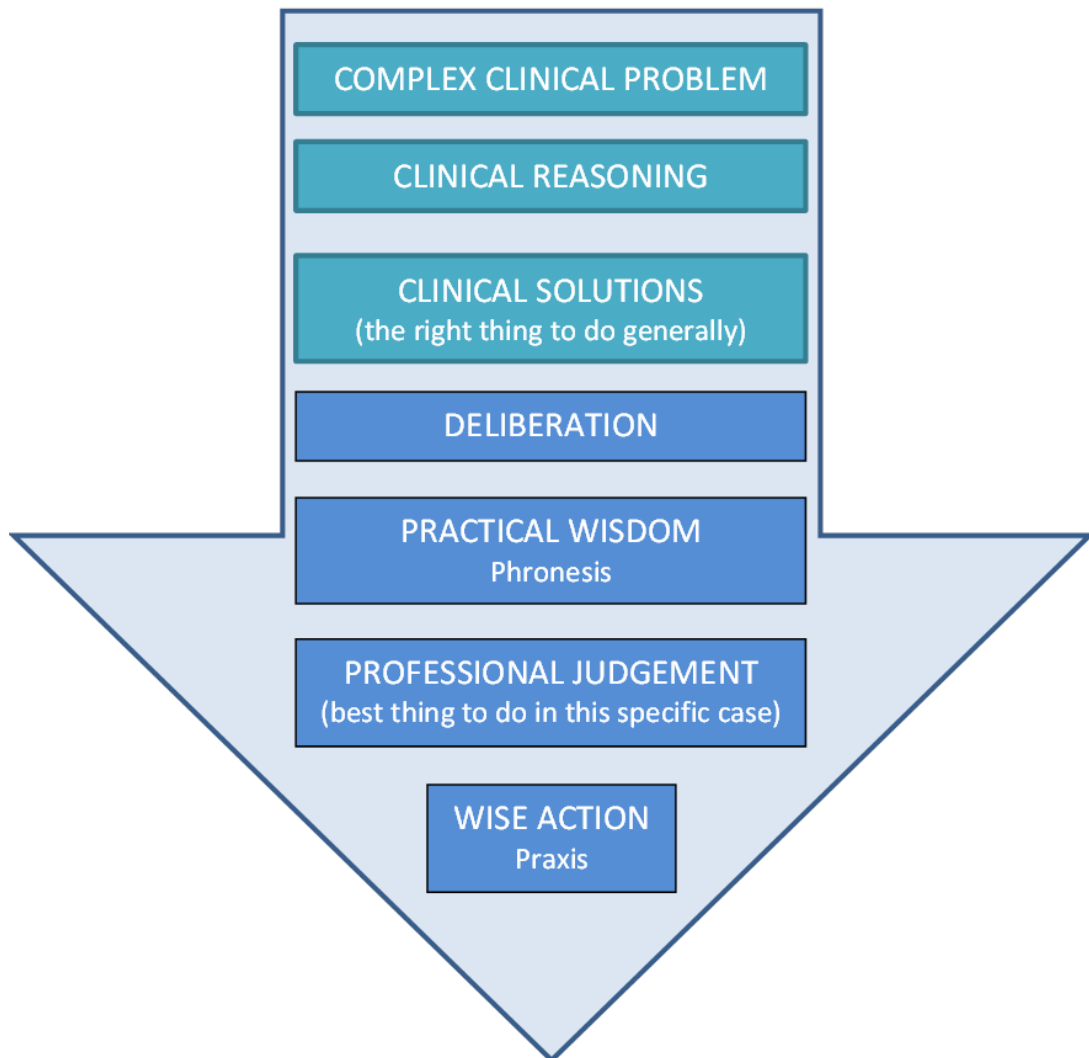


Figure 1.3 Complex clinical decision making

The diagram sets out a model of clinical decision making which considers 2 components: working out the options (the right thing to do generally) and a professional judgement (the right thing to do in this specific case). The process is underlined by personal professional judgement. The significance of context is highlighted in understanding the patient case and coming to crucial decisions relating to medical practice. This process is described in a linear fashion which is done to simplify what is happening. That is challenging because the process is in reality complex and unlikely to

follow such a logical path. Nevertheless, I find this model helpful especially in defining elements of the process, and is perhaps the closest to describing the area of my investigation.

The particular aspect of this model that is of real importance is the second part of the diagram, where a doctor moves from considering the “right things to do in general” to a judgement, the “right thing to do in this specific situation”. This is the focus of my research and is set out to enable a fuller understanding of the aspect of decision making that my research focuses on. It consists of three steps (Fish and de Cossart, 2007):

1. Deliberation- in contrast to the initial phase of clinical reasoning, deliberation recognises the complexity of clinical thinking acknowledging messiness and uncertainty and that the response from healthcare professionals may need to mirror this. It is about “recognising all the relevant elements, accepting the humane nature of the problem, contextualising it, seeing multiple views of it, interpreting, prioritising and attributing significance” (Fish and de Cossart, 2007: p126).
2. ‘Practical wisdom’- this is based on Aristotle’s concept of phronesis, focusing on the particular ethical dimensions and moral situation of the patient, and which particular ethical principle to apply in this situation. They quote Carr (1995, p71) by stating the doctor who possesses practical wisdom is the professional who ‘sees the particularities of the practical situation in the light of their ethical significance and act consistently on this basis’ to achieve the greatest good for the particular patient.
3. ‘Professional Judgment’- this is the final decision about the best action to be taken in a particular patient’s case, and is the end result of the process of clinical thinking. They describe it as a process of answering the following questions:
What ought to be done in this case?
What can be done in this case?
What is morally right for the patient in this case?
How should we go about doing it in this case?

After making a professional judgment the final event is a wise action or practice.

My area of interest is in investigating the process from knowing the right thing to do generally to deciding the best course of action in a particular situation, ie. the three steps described above. These are difficult areas to investigate. In designing their decision making pathway, Fish and de Cossart (2007) use the phrase “The Invisibles” to illustrate the fact that most of the elements are not visible to an observer. These are often implicit or tacit, but trying to make them more visible is important for others learning those skills, often through case discussion and reflection. In a separate but related enquiry, Fish and Coles (1998) carried out a series of case studies using practitioner research, where the professionals researched their own practice. In this they picked a critical incident and gave the practitioners some prompting questions to help their reflection and analysis. There has been very little research carried out to look at this particular aspect of decision making, and methodological approaches are needed that will illuminate the “invisibles”.

Eraut (2007) has carried out a number of studies looking at professional learning in the work environment to understand how learning takes place, including doctors. He corroborates the fact that methodologically a major challenge is that learning can be implicit and tacit.

He argues that most learning takes place within the workplace and this may be a combination of “work processes with learning as a by-product”, “learning activities within the workplace or learning processes” and “learning processes at or near the workplace”. For workplace learning to occur, a number of factors are important:

- the most important is confidence, in particular to do things and seek learning opportunities
- successfully meeting challenges to boost confidence and the value of the work
- feeling supported and getting feedback

This suggests a mixture of internal issues and the environment of work being supportive and providing appropriate stimulus and feedback. He also stressed the importance of people not being overstretched- in his study he found that some staff were over-challenged which was detrimental to their confidence.

I have written in more detail about complex decision making models, partly to highlight the area of my research that my data will focus on. I have also sought to highlight the arguments particularly over the role of deliberation in this process, and some of the

challenge of investigating a largely hidden area. By concentrating on complex decision making, I accept that in straightforward decision making, much of this may be intuitive. However my area of interest is at a different end of the decision making continuum- considerable deliberation and weighing up of the options needs to take place.

1.6 Summary

There has been limited investigation of the development of clinical judgement among doctors. Much literature focuses on the importance of the role of doctors as professionals or on diagnostic decision making and when treatment decision making is relatively straightforward. There has been less work done on how doctors work in complex situations when there are no clear rules, and how they develop these skills. The key gap is research exploring how complex decision making skills are developed, and the role of the doctor and the training environment in this.

My area of interest in carrying out this research is in complex decision making. My understanding of the nature of professional expertise in medicine is pragmatic. In my work, I can see that a significant amount of practice is routinized and intuitive. Complex decision making by doctors seems to involve both being able to follow rules and evidence, but also being able to weigh up and ignore the rules when needed or come to a decision when there is no one correct path to take. The key seems to be to be able to decide on an action that is reasoned and can be defended and morally justified in the circumstances it was made. The latter aspects are important because if we are looking at decisions that are taken when there is no longer a clear path, it becomes harder to tell whether judgements/ decisions are wise/ unwise. Balancing risks is paramount, and applying a combination of skills, experience and judgement.

One of the biggest challenges of investigating this area is that the processes may be unconscious and hidden. The aims and objectives of the study are set out below:

The aim of this study is:

-To understand how training doctors develop practical wisdom

The objectives of the study are:

-To investigate training doctors' approaches to difficult decision making

- To understand and describe the influences on the development of these skills (difficult decision making)
- To identify potential interventions that may help develop these skills

Anticipated outcomes:

It is anticipated, in line with the research objectives, that there will be several outcomes:

- Insight into the ways in which training doctors acquire judgement or wisdom- factors that help or inhibit this process
- A clearer understanding of the role that the structure of training, and in particular the nature of the relationship with supervisors, plays in developing this area.
- An understanding of how the training environment can be altered to support the development of clinical judgement, and possible recommendations made as to how this could be taken forward.

Chapter 2. Methodology

The previous chapter explored the literature around clinical judgement, how professionals develop their skills before focussing on the key area of this study. This chapter looks at the detail of how the research was carried out to achieve rigour and ensure that the conclusions stand up to scrutiny. The chapter sets out:

- the methodology and the underlying theoretical assumptions of the study
- the methods used in the study and the issues arising from these
- the process of data analysis

2.1 Research Stance

My approach to this research is underpinned by my understanding of the way clinical judgement is constructed and the importance of interpretation in understanding that process. The area being studied is complex clinical judgement, the process of individualising decision making between “the right thing to do generally” and “the best thing to do in this specific case”. This is described in greater detail in the preceding chapter. The focus is on how doctors develop these skills. Both exploring judgement, and how it is developed, are hard to investigate because they rely on underlying thinking being revealed, either through behaviours or in the case of interviews, the participants’ own recollection/ construction of their thinking. In this study I am seeking to investigate and construct an understanding of the process, recognising that there is not a single answer or truth.

In this study I adopted an approach of social constructivism, that the area of knowledge being looked at is constantly changing and evolving, shaped by people’s experiences and interactions. Charmaz (2006, p130) describes this as investigating how and why participants construct meanings and actions in specific situations. The researcher will interpret this; as such there may be multiple interpretations. In taking a constructivist approach, she identifies the importance of looking at the contexts of the people being studied, the differences and similarities between them and what impact these aspects, sometimes hidden, may have on their interpretation. This idea of how knowledge is created underpins my approach to exploring the subject, both the interviewing and the analysis.

The subject matter being investigated is complex and involved a range of aspects, especially around relationships, interactions and personality. The people taking part in this study carried out their decision making as a result of the environment that they were in, their interpretation of it and the meaning that they give to that interpretation. My study seeks to understand that process, recognising that the results represent an interpretation of what is taking place. I was particularly looking to uncover seemingly tacit aspects to decision making by probing the participants' stories. Blumer used the term "symbolic interaction" to describe "the student (researcher) catching the process of interpretation through which actors construct their actions" (Blumer, 1962, p188). The actors in my research were the training doctors. The actions they decided on were determined by the meaning ascribed to those actions, and the meaning comes from interactions with others. In this study, I am interpreting the doctors' constructions of the process- in the data chapters the importance of interactions and the meaning ascribed to their actions will be seen.

One of the major challenges of this study was my own role professionally in relation to the training doctors and the influence that may have had on their behaviour and interactions with me. I am a Consultant in Palliative Medicine and in that role am a Clinical and Educational Supervisor of all levels of doctors and am heavily involved in undergraduate teaching. This is backed up by an educational academic training arising from a Master's degree in Education and the taught components of the professional doctorate that this research contributes to.

The concept of "reflexivity" is relevant here, considering the relationship of the researcher to the study and the effect that may have on behaviour and results (Aull Davies, 2008, p7). Reflexivity refers to the researcher knowing and recognising the potential influence they may have on the study, as well as being explicit about it. I believe also that there were considerable advantages in my professional role in this research in being able to understand and analyse the content, in a way that a lay researcher may not have been able to. Shaw describes the importance of the researcher as a co-constructor, looking at how their pre-existing beliefs and understandings are changed by the interactions with participants. (Shaw, 2010, p241). As a researcher embedded in the subject topic, my role as a co-constructor was significant and helpful to the study.

The stance taken in this study is important, because it dictated the methods used and subsequent analysis.

2.2 Aims/ objectives of the study

As set out in the Background chapter, the aim of this study is:

-To understand how training doctors develop practical wisdom

The objectives of the study are:

-To investigate training doctors' approaches to difficult decision making

-To understand and describe the influences on the development of these skills (difficult decision making)

-To identify potential interventions that may help develop these skills

The study seeks to investigate the thinking process between: “the right thing to do generally” and “the best thing to do in this specific case”, and understand how doctors develop skills in this area. By understanding some of these factors, attention could be focussed on what can be done educationally to further this process.

The method chosen to investigate this area was through the use of in-depth interviews, reflecting the stance that this study takes in terms of epistemology and ontology.

2.3 Qualitative interviews

A number of approaches to this study were considered before deciding on the use of in depth qualitative interviews. A participant observation study was potentially attractive in allowing the opportunity to watch the decision making as it happened and interview the subjects at the same time.

There were a number of reasons why carrying out interviews was more likely to achieve my research aims. Bryman identifies a number of areas where qualitative interviewing may be advantageous over participant observation (Bryman, 2008 p.466) relevant to this study:

-Issues resistant to observation

I wanted to understand how junior doctors learned to make difficult decisions, particularly focussing on decisions where they had to individualise decisions. These

situations arise unpredictably. As discussed already, much of the thought processes are tacit, and not obviously observed on a day to day basis. The only real way to uncover what people are thinking in the decisions they make is to ask them questions.

-Specific focus

The judgement areas that I wanted to look at to understand how doctors reach decisions arise unpredictably. Using interviews with a specific focus, the subject matter could be looked at explicitly and in more detail, as well as understanding how the training doctors interpreted their own thinking and training. Observation would have had to take place over a considerable amount of time to generate even a small amount of data, without the ability to really focus on key areas.

-Reconstruction of events

In carrying out in depth interviews, I was able to focus on some of the doctors' difficult cases. This enabled the doctors to "return" back to these cases, and think through all their thoughts and actions at the time. In turn that allowed me to understand how they reached decisions in difficult situations where their skills were stretched. This could only be done by asking the doctors about the events.

-Reactive effects

In carrying out this study, my own role was both potentially an asset as well as a hindrance. The reason for choosing to explore this area was because of having an interest in the subject, involvement in and knowledge of undergraduate and postgraduate medical training. The study was focussing on junior doctors, most of whom either worked with me or knew who I was. This was an asset in being able to be an active participant in the process, in obtaining data and interpreting/ understanding it. The relationship was also likely to have an impact on the information some of them were willing to share, especially if they felt they were being judged. I felt this was likely to be a more significant issue in an observational role, where my presence was likely to have had a significant impact on behaviour.

-Greater breadth of coverage

I wanted to understand the experience of a number of doctors in different settings to learn more about the impact of the learning environments and what happened if that

changed. Interviewing would allow this to happen whereas participant observation would have been limited to one or two clinical environments for practical reasons.

Individual interviews were used because I wanted to explore how individuals think and behave. By focussing on their own situations and clinical cases, I was able to explore their understanding more deeply. This would have been considerably more difficult in a group setting where we would have needed to use less personal situations to access people's thinking.

A constructivist approach has been adopted in this study, and this was reflected in the conduct of the interviews. The interviews were designed to be active processes where both the participant and researcher took part- discussing, reflecting and aiming to make sense of what was happening. Holstein and Gubrium describe the process as: "Respondents' answers and comments are not viewed as reality reports delivered from a fixed repository. Instead they are considered for the ways that they construct aspects of reality in collaboration with the interviewer. The focus is as much on the assembly process as on what is assembled." (Holstein and Gubrium, 1997, p.127)

In other words, the interviews were aiming to get an understanding of how the junior doctors worked out their own perspectives on how to deal with the particular situations. The value was in the actual narrative and the emotions/ meaning embedded in it, as well as the ability to reflect and ask questions, encouraging the doctors' own reflection. There were likely to be many complex ways in which the doctors developed their skills. This study tried to understand some of the approaches that were important.

2.4 Research Participants

The doctors who participated were at that time based in settings where I worked, within two organisations and therefore I had access to them. The doctors themselves were all in rotational posts and their discussions usually focussed on situations in other posts. The doctors were a mixture of some who I directly worked with and others who I did not know at the time of interview. The group was chosen for pragmatic reasons, allowing the research to be carried out while continuing with the rest of my job.

The figure below shows the current structure of medical training:

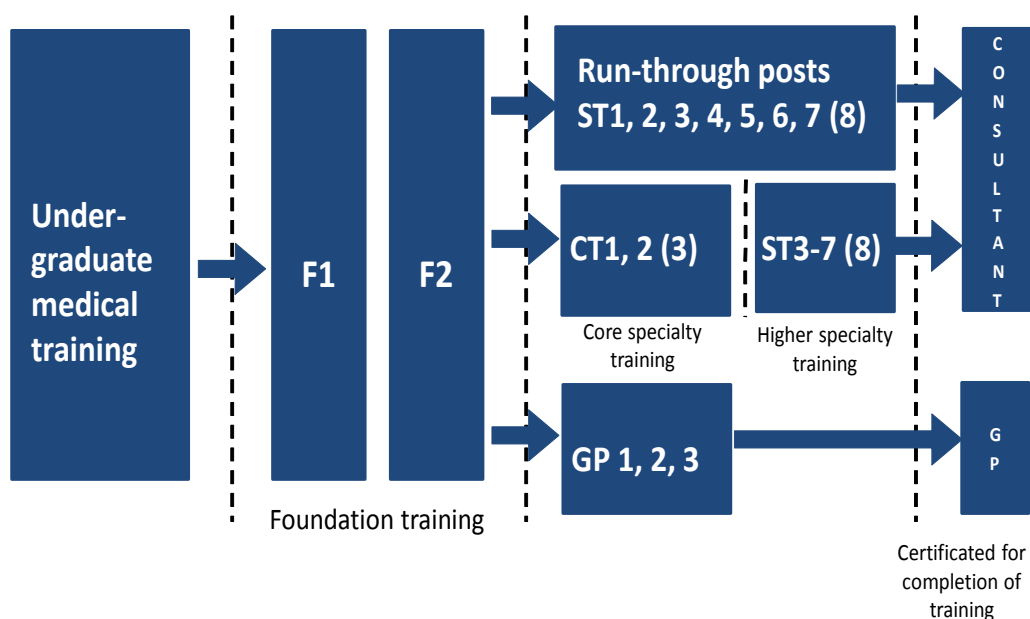


Figure 2.1 Clinical training structure

The training doctors approached included 3 groups of doctors:

-Specialist training doctors in general practice (GP 3 in the above diagram) and palliative medicine (ST3-7). These two groups of doctors were all close to taking up their final post, where they would be expected to work independently making these types of decisions regularly.

-Foundation doctors (F2), near to the beginning of their training were interviewed to provide a contrast. Although early in their training they would be involved in complex decision making, especially during nights and at weekends where they often work independently.

These three groups (GP, palliative medicine and foundation) were not intended to be comprehensive, or fully representative of the medical workforce. However, they represented areas of medicine where challenging decision making takes place on a regular basis. At that stage of training they would have had significant exposure to deteriorating patients where difficult decisions had to be made and reviewed. General practice and foundation training requires doctors to work in a variety of settings, enabling training influences from all specialties involved in training such as surgery, medicine, paediatrics, general practice and psychiatry.

Within this group (GP, palliative medicine and foundation); sampling was purposive to get a spread of doctors in the three areas at different stages of their training. The balance between doctors near the beginning of their training and towards the end allowed exploration of the experience of being at different stages of training.

2.5 Research Ethics Approval

This study sought and received approval from the regional Research Ethics Committee (REC- see appendix 2, the Research and Development committee of my research sponsor NHS trust and University ethics approval. All participants had full capacity to take part and no patient contact was required in the study. One of the key areas of discussion with the REC was about whether there was a conflict of interests in having the dual role of researcher and clinical supervisor. Specifically a dialogue took place about whether participants would feel coerced into the study, and what would happen if information came up in the interviews which would cause conflict with my clinical/ educational role. This was discussed extensively and the committee was happy that there were enough safeguards built into the process to ensure that these potential issues had been addressed as far as possible. These included participant information, the consent process, anonymity and clear participant information outlining governance processes. A number of discussions had taken place within the supervisory team about this area. The overwhelming advantages of this dual role seemed to outweigh the disadvantages in terms of subject knowledge and being able to ask questions and interpret responses. There were no other major ethical concerns raised.

In line with the BERA guidelines (2004), the following ethical issues were addressed:

1. Participants were fully informed in writing. The major impact of this study for participating doctors was being interviewed and having their responses to case studies recorded. The methodology was discussed and agreed with the training co-ordinators to make sure they were happy for the protocol to be used with doctors. This was particularly important as my own role overlapped between being a researcher and potentially working clinically with the doctors.
2. Participants were told the process of evaluation of the research, why the study was being carried out, and what will happen with the results, in terms of it contributing to a doctorate degree and publication.

- Written consent was obtained from all participants. After giving consent, they were able to withdraw at any time. The participants were all working professionals as well as being adult learners and therefore being able to give informed consent was not an issue. The study was unlikely to cause distress, but in the event that it did, I had access to the participants' educational or clinical supervisors to obtain support for the participants.
- There were no incentives or inducements to take part; the only potential benefit was the opportunity for participants to think more about their own approach to this area, and their contribution to wider knowledge.
- All data collected was anonymous and confidential. No personal data was collected.
- The results of the research were to be fed back to participants, submitted for a doctoral degree and for publication/ presentations. There was no external sponsorship and funding.

In collecting the data, I found the training doctors enthusiastic and keen to take part, often willing to share very personal stories. I had anticipated that they might be reticent to open up to me, and I describe in the results section some taking a little while to warm up, but once engaged in the interview they came across as being very open.

2.6 Data collection

Participants were approached in writing with an invitation, information sheet about the study and a consent form. They were approached during the research data collection phase to participate with a letter and written information about the study. They were then contacted after at least 24 hours to see if they wished to participate. Interviews were carried out with the junior doctors at a time and place of their convenience. Because of the nature of the study, there were no issues in relation to capacity.

In the formal invitation to participants to take part in the study, the information sheet asked them to think about a difficult case which had posed some dilemmas for them in relation to having to make a complex decision with a degree of uncertainty as to what decision to take. They also needed to be happy to talk about the case.

This was the starting point of the interview and the case was explored in depth (their feelings, thoughts, events, the situation, key players etc.), before looking at the doctors' training experiences and how this related to their ability to make difficult decisions.

This latter area often covered the role of trainers, peers, the work environment, learning skills etc.

There are many different aspects to medical decision making that could have been explored. The purpose of starting the interview with a participant's case was to focus on the particular area being investigated and to get the participant to start to think about the topic before the interview took place. By grounding the questioning in a case it was possible to understand actual decisions and behaviours, rather than hypothetical decision making which would have been less reliable. Fish and Coles (1998, p.58) recommended that understanding this type of complex process (decision making) is better done by attempting to analyse a small piece of practice than attempting a large scale exploration of practice. In using this as a starting point, they suggested that an understanding of core issues about wider practice could then be discovered. This was the approach I took to trying to open up the decision making process.

An interview guide or aide-memoir had been produced (Appendix 1), but was rarely used. The interviews tended to naturally flow through key aspects and it was appropriate to allow the interviewees to shape the interview direction, mainly facilitating their description and analysis. Occasionally I added other ideas into the interview where an important issue had been discussed in other interviews and I wanted to get the participant's perspective on it. This occurred more as the study evolved and the interviews had been analysed. The more the interview strayed towards a semi-structured stance, the bigger the danger of missing original thoughts from the interviewee and so the interviews were kept as flexible as practical.

The interviews were conducted in a private office in the place of work of the interviewee, and digitally recorded. They were sent to a transcriptionist experienced in working with educational projects for typing verbatim. I did not do any transcription myself because of time pressures, recognising that carrying out transcription can make a positive contribution to starting data analysis. All the recordings were listened to by myself with the transcripts to check for accuracy and make sure meanings had been conveyed. Listening to the interviews also enabled me to check on my interviewing style and make sure I was not missing any opportunities or inputting my own views. Occasionally, on listening, I wished that I had picked up on a particular comment during the interview but mostly felt that they had been comprehensive.

2.7 Data Analysis

Analysis of the interviews took place in an iterative way, intertwined with data collection as the interviews evolved to take into account ideas being generated from the previous data. The approach taken to analysing the interview transcripts was consistent with a grounded theory approach.

Corbin and Strauss describe grounded theory as “Theory that was derived from data, systematically gathered and analysed through the research process. In this method, data collection, analysis, and eventually theory stand in close relationship to one another.” (Corbin and Strauss, 1998, p12)

Ideas have evolved considerably since grounded theory was first described and most studies have modified or used aspects to analyse data, rather than adopting grounded theory as a scientific approach to the whole research study (Bryman 2008, p541). In looking at carrying out the data analysis, I have found the work of Charmaz to be persuasive and pragmatic, advocating principles rather than a single prescriptive formula (Charmaz, 2006, p.9).

The first stage of analysis involved open coding. This was done in 2 ways
-Initial formal line by line coding to make sure that as many aspects of the data were looked at as possible initially. The data was organised and labelled in to initial codes.

At this stage by avoiding looking at the big picture messages in the data, I was hopefully able to make sure the details included in the transcripts were not overlooked. This was also done to try to avoid imposing my own ideas on the data which was more likely to happen if the analysis started in a more general way. This phase of coding generated multiple codes, many of which were merged in the next phase. Corbin and Strauss referred to these initial coded entities as “concepts”. (Corbin and Strauss, 1998, p101)

-Focused coding followed the initial phase to look at the codes that had emerged and review which of these codes made most analytical sense or where some could be merged. At this stage concepts were developed into categories that could be described and recognised in the data. These categories typically contained a number of codes from the initial analysis, but linked together in a more coherent way. (Charmaz, 2006, p57)

As these categories emerged, accounts were written of what the categories represented and contained.

The transcripts were looked at a number of times in relation to the categories to make sure that the categories were comprehensive, and to take a step back from the data to make sure the emerging story made sense. Describing the categories formed a key part of this phase- putting down on paper my thoughts about the categories chosen and the connections occurring within it. In writing “memos”, I aimed to follow Charmaz’ suggestions of writing narrative statements that:

- Define the category
- Explicate the properties of the category
- Specify the conditions under which the category arises, is maintained, and changes
- Describe its consequences
- Shows how the category relates to other categories (Charmaz, 2006, p72-95)

Developing the categories and relationships between them formed the basis of the model developed in the data section of this thesis which brings together the major categories. As focussed coding took place, interviews continued to take place, enabling interviews to take on board the emerging categories. The categories and summaries continued to evolve throughout the study. Data collection and analysis continued until “theoretical sufficiency” was reached. Dey believes that to describe data saturation is to overstate the case because data cannot be fully coded; that categories are suggested by the data and the researcher themselves determines when saturation has occurred. (Dey, 1999, p257). During the coding process, data handling and analysis was done with pen, paper and computer, rather than a specific data analysis software package to carry out analysis in a more visual way.

The concept of reflexivity has already been discussed in relation to the ethics of the study. Similar influences can take place when analysing the data. The difficult part is that much of this influence is subtle and can take place at a sub-conscious level. To guard against this, in the interviews my clinical training helped in being able to conduct interviews in a way that conveys neutrality. At the point of analysis, by being disciplined in following a clear process of analysis, the chances reduced of the data being interpreted to fit with my own ideas. Within the literature there is

acknowledgement that although this is an important area, it is hard to account for or quantify because of the unconsciousness of the process (Cutcliffe, 2003)

Supervision meetings were important during this process as a means of quality assurance. These took place regularly during the data collection and analysis process to discuss transcripts and look at my emerging data. As my analysis progressed, it was challenged and shaped through these discussions. This was a way of ensuring that I did not make assumptions, checked for any “blind spots” and took on board different perspectives. The background of my supervisors from education and medical education with a vast experience of different methodologies helped to ensure rigour in the analysis process. In writing up my thesis the categories were considered in relation to existing literature and how they might fit together to develop an overall modelling of the process.

2.8 Research trustworthiness

Research “trustworthiness” has been described in terms of four key components: credibility, dependability, transferability and confirmability (Lincoln and Guba, 1985).

Credibility is about how much the data takes into account a full range of alternative interpretations. Dependability is about the consistency of decision making in analysing the data and the way it is collected. Silverman suggests that key aspects of delivering this are using a constant comparative method to test out emerging theory and deviant case analysis to look at cases/ data which does not fit with an emerging model or theory (Silverman, 2006, pp.298-299). He also emphasises the importance of avoiding anecdotalism by including all cases of data in the analysis. Credibility of the data was enhanced by my own involvement in training and the expertise of my supervisors through supervision meetings, which brought a range of views on the data.

The dependability of the research relies on setting out clearly the process that has taken place: the methodology, analysis and theoretical stance being taken including using the data appropriately. Key meetings, decisions, and strategies deployed during research collection and analysis were recorded carefully so that the process was transparent.

Silverman describes 3 important steps that should be satisfied:

- tape recording all face to face interviews
- carefully transcribing these tapes according to the needs of reliable analysis

-presenting long extracts of data in your research report- including at the very least the question that provoked any answer. (Silverman, 2006, p287) All of these were carried out.

Transferability is about how easily the findings of the study can be transferred to other populations. I consider this in two ways. Detailed accounts were kept of the methods and decisions taken so that the process could be replicated. The coding of transcriptions was disciplined to try to ensure this. In relation to the study findings, the purpose of the research was to understand the process of learning that was taking place in this group of doctors. The analysis is constructed from an interpretation of what is taking place, and as such does not claim to represent a single truth or be necessarily generalizable.

Transferability improves with theoretical sampling to test out emerging theory on new cases and the process of comparing emerging findings with new data. The findings of my study were compared with other studies to check for consistency. Confirmability is about how much my own experiences or views impacted on the data. This aspect is important and has been discussed already in this chapter.

This chapter has set out the methodology underpinning the study. The next chapters will present the data analysis of the twelve doctors interviewed (see table below and appendix 2), building up the key categories in to a cohesive, dynamic conceptual model. The focus is on key interactions that the training doctor has: internally and externally; and how these come together through the process of “gaining experience” to accelerate the development of practical wisdom. The findings will start by looking at the process of “gaining experience”.

Doctor	Stage of training
Tom	Foundation training year 2- F2
Cath	F2
Jane	F2
Freya	GP registrar
Ellen	GP registrar
Kate	GP registrar
Tina	GP registrar
John	GP registrar
Anna	GP registrar
Ben	Higher Specialist Training
Bob	Higher Specialist Training
Dave	Higher Specialist Training

Table 2.1 Research participants

Chapter 3. Data 1: Gaining Experience

In my three data chapters, I will combine both the findings of my study with existing literature. The first data chapter focuses on “gaining experience”, the process that the training doctors went through in developing practical wisdom. This was an overarching process as the doctors moved through different phases of decision making, from the initial routine decision making to much more complex decision making. The two other data chapters focus on key interactions that accelerated or inhibited the process of gaining experience.

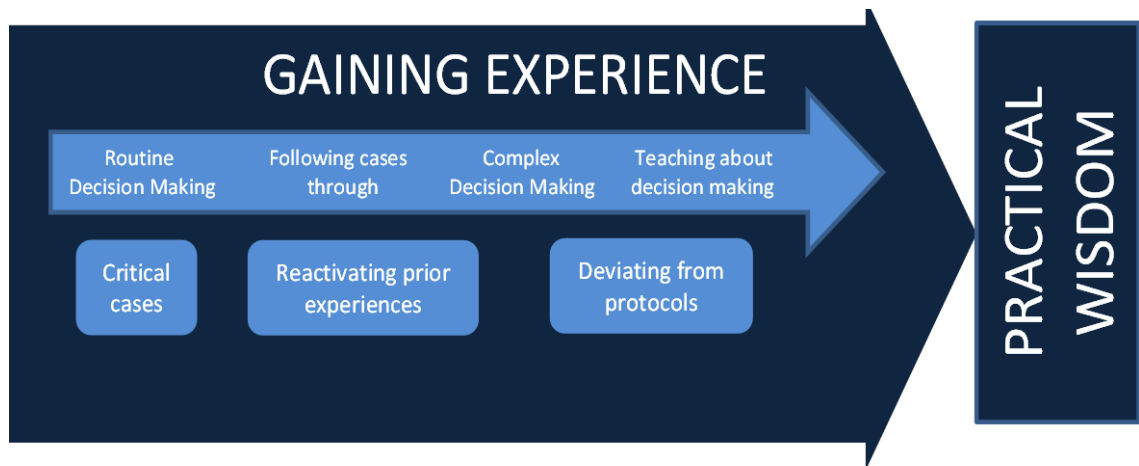


Figure 3.1 Gaining Experience

In this chapter, the initial section describes what seemed to be a continuum of steps:

- Building experience in routine decision making
- Following cases through
- Making more complex decisions
- Teaching others about decision making

Other key elements that emerged as significant in gaining experience, but which did not clearly form part of a continuum are then covered:

- critical cases
- reactivating prior experience
- deviating from protocols

The concepts described in this section have been developed through analysis of my data, as described in the methodology section. The findings resonate with literature

around professional development. In particular, Eraut described three time continuums: instant/ reflex, rapid/ intuitive and deliberative/ analytical (Eraut, 2007). In each of these different types of decisions and thought processes are occurring, and professionals need to be able to develop all of them. The three descriptions are similar to the continuum described below where the doctors build their experience by starting with more “routine” cases before moving on to greater complexity. The Dreyfus model of skill acquisition is also recognisable as professionals move from novice to expert through five levels (Dreyfus, 1986), which has been built on within nursing by Benner (1984).

3.1 Stage 1. Building up experience in routine decision making- volume, pattern recognition and immediate feedback

The doctors interviewed discussed the importance in their formative years of building experience. They did this by seeing many cases with a variety of different problems. In doing so, they could eventually become comfortable with routine “every day” decision making. This seemed to help them make the transition from being an observer to a decision making, active participant. A key aspect of this was seeing a large volume of patients.

Jane, an F2 doctor described this:

*“Learning is really just about being exposed to as many cases as possible”
(Jane Line 438).*

Dave a SpR with more experience elaborated further:

“After my first 6 months I was taking on a lot more responsibility... over the preceding months you get used to having to make decisions. And it’s pattern recognition- this is what we did last time, we’ll do that again.” (Dave Line 227).

An important aspect of being exposed to as many cases as possible seems to be to acquire as quickly as possible the ability to recognise patterns of clinical presentations, how these are managed and to then put them into practice. Pattern recognition was a vital part of becoming familiar with routine decision making. There were particular environments where exposure to cases and being able to make decisions was more likely to happen, Accident and Emergency and working out of hours on-call.

Dave described his experiences working at night:

“I always felt that when you did a night shift as a junior doctor, it actually felt like you were being a doctor. You were making decisions, you weren’t just writing on the ward round or changing charts based on someone else’s opinion, you were the one making the decisions. So I think, for me, night shift was a really formative part of part of my independence as a doctor.” (Dave Line 325).

Anna and John, GP registrars and Ben, a SpR described the value of working in Accident and Emergency. Anna described a key area around not only the volume of patients but the volume of decision making all of which helped to hone her judgement. Often these decisions might be quick and straightforward but they built up confidence:

“I became a lot more confident in making decisions and I think it’s probably because you see more people, you’ve got to make quicker decisions, sometimes straightforward I suppose in that they’re either ill enough to come in, or they’re well enough to go home.” (Anna Line 226)

Tina found General Practice helpful because of the volume of patients and independence of working:

“Working independently in the GP setting has helped me become more aware of when I’m able to make a decision and when I need to discuss it with other people.” (Tina Line 194)

Ben and John described the value of being forced to make decisions, but also the immediacy of feedback as to whether the decision was correct and the fact that help was available if you needed it:

“The job that forced me to make decisions was A & E- you sort of had to make the decisions. By decision I mean whether someone stays in hospital or goes home. It feels quite a big decision at the time. There’s a lot more risk associated with sending someone home, rather than admitting them. It’s a good job because if something horrible happens you can get help, but you can’t do that for small things. I think that’s where you learn to make judgements.” (Ben Line 360)

“Being able to do a history, examine, make a clinical decision about what you think the diagnosis is and then test that hypothesis with investigations. So in half an hour you can make what you believe to be a sound diagnosis and in an hour your tests confirm or change your mind about what might be going on” (John Line 199)

John was talking about everyday diagnostic decision making where tests confirmed a hypothesised diagnosis. This was very much around routine decision making where there were clear outcomes. Several people emphasised the importance of this and the fact that people were able to tell quickly whether their decision/ assessment was correct,

even without getting feedback from a senior. This seemed to be an important training area before doctors could address more complex decision making. They were able to accelerate this process by working in specific roles where they had greater exposure to cases and decision making, but backed up by quick feedback.

Boshuizen described the importance of the early years of professional medical training where “thousands of concepts, principles, rules, skills, procedures, patterns” are learned and organised in small steps (Boshuizen, 2004). Once this is done, higher links can be made between different concepts to allow more complex reasoning to take place. The accumulation of large numbers of cases is crucial to this process of “gaining experience”, volume and processing of information, often subconsciously. This phase would be recognised by Eraut as instant/ reflex or rapid/ intuitive, where the doctors’ assessment relies on pattern recognition or rapid interpretation, with instant or intuitive decision making, often routinized actions, and low levels of metacognition (Eraut 2007). In my study, this subconscious initial process of seeing a volume of cases was extremely important and particular posts/ situations helped in accelerating this. There is relevance in this to the training of doctors and the posts/ order of posts that are of most value for this stage of development.

3.2 Stage 2. Following cases through- outcomes of decision making and choices available

While busy, often acute jobs helped with building up routine decision making and getting immediate feedback, one of the challenges was for doctors to manage more complicated patients over a longer period to see the impact of their decisions where these decisions did not have an immediate impact. As cases became more difficult, the acute environment seemed to pose more learning challenges.

Tom described the difficulty of working in a more acute environment:

“It might be that you’ve seen someone on your shift and you finish your shift before somebody else reviews the patient. It’s just too busy to often look back through what happened to patients when you have made decisions.” (Tom Line 257)

Jane contrasted the breakdown in team structure that occurred out of hours, when she found herself in a new team, losing some of the important relationships necessary for interactive learning:

“Working out of hours is a bit different because you’re always working with, you know you bleep the med reg and it could be anybody... you’ve not worked with them before and you’ve not met them... So obviously the whole team thing out of hours is really difficult, I feel like you’re very much on your own... you don’t all work together, you’re all kind of doing things separately.” (Jane Line 302)

This could impact on the ability to make decisions- often the main purpose for an on-call doctor was to keep the patients as safe as possible, without making too many changes to the overall plan. When changes were made, there was often very little feedback:

“On-call...it’s difficult to know how much of a change to make. And you don’t know on Monday because there’s no real handover, whether you’ve made things better or worse” (Tom Line 290)

This posed three challenges out of hours- avoiding making decisions, making intellectually “safe” decisions, and not getting the chance to assess whether a decision was correct. In contrast, the training doctors felt that posts which provided more continuity allowed them to see the impact of harder decision making:

“I’m based on the ward and do the same sort of shift...it is quite easy to get that sort of feedback and to know what’s going on with the patients. You’re the one that sees the patients more than the seniors but when they do, you get feedback and check that your management is right. I find on-call shifts a lot harder- it’s just hard when you meet a patient for the first time...if things aren’t well documented, you might not know what the team’s thoughts are.” (Tom Line 264)

“GP’s good for finding out...if you admit someone to hospital, you can see what happened in hospital, what treatments were given and whether it was the right thing to send them in or not” (Anna Line 239)

Crucial to this development was the continuity of involvement with the patient and a mechanism to review the decision making. More acute posts such as Accident and Emergency or out of hours shifts seemed important for learning the skills of quick, every day decision making, but lacked obvious opportunities for reviewing more complex or longer term decision making. However, there were sometimes opportunities within these more acute settings for training doctors to get valuable opportunities to develop complex decision making skills. This was either through their own motivation or because their supervisors had set up systems to try and overcome the natural obstacles. Ellen talked about taking ownership herself of the responsibility for following through decisions, and Dave described working for a team of Consultants who recognised the issue and adjusted their timetables to overcome it:

“You should be making decisions for yourself and following them up, seeing was it the right one, always reflecting, thinking about your decisions, changing them sometimes.” (Ellen Line 358)

“The Consultants were very good at, particularly when you’re on night shifts, doing morning ward rounds early so you would get feedback on what you were doing, and again it was very supportive, and constructive. So that helped.” (Dave Line 261)

The specific clinical setting seems to lend itself to specific types of decision making, but a skilled learner or trainer was able to adapt and compensate for any shortcomings. In the Dreyfus model of skill acquisition, this stage might be seen as being around level three or “competent” where the doctors are still generally following standard protocols and making routine decisions, but they are starting to see longer term outcomes as being important and overtly think about decisions (Dreyfus 1986).

As doctors moved on to more complex decision making, the importance of seeing different ways of managing patients in different settings added a depth to their experience.

Bob described the benefits of working in different settings:

“Different areas of working help, community, hospital...helps you see a different aspect of a person and a different aspect to their care. To help you make a more rounded decision... especially when you try to imagine them in their own home, how they would cope, what treatments are appropriate. So being in different environments has helped, given me more insight with my management plans.” (Bob Line 297)

The experience brought a wider perspective in deciding how to manage a patient, and what decisions to make. Jane talked about working in 2 very different hospital settings and the perspective that that added, in particular that patients with the same problem might be managed in different ways depending on the circumstances:

“That was much more about younger patients coming in, who if they became much more unwell, would need to go to ITU.... Seeing a variety of patients is important, so that you can appreciate, you can tell instantly by looking at someone and knowing their past history they would be appropriate for escalation or not.” (Jane Line 215)

“Elderly care was really helpful... you get so many patients and you realise an appropriate level of care for them... for an infection, you might this and this... But once you’ve done those things you can be reassured that you’re probably doing everything that you need to. I think it gives you a sensible approach,

because it's not like a ward where everyone who gets unwell gets rushed off to ITU." (Jane Line 201)

John specifically talked about seeing different individuals manage situations slightly differently:

"seeing death and dying in a variety of circumstances and a variety of conditions and seeing how they might be managed by different clinicians." (John Line 332)

The doctors in this study found clinician variety a positive aspect of training in developing decision making skills. The doctors found it hard to say exactly what it was about working in the different settings and with different people that was important, but perhaps Freya and Tina capture some of the nuances that these experiences bring, the ability to handle uncertainty, have a number of options and look at the bigger picture of the grey areas in decisions making:

"Having worked for such a long time in the NHS in different hospitals, I've seen similar cases and I know sort of how to handle those patients. And not just in one way. I think I've learnt much more about respecting patient's autonomy- listening to patients, their ideas, concerns, expectations- it's extremely useful." (Freya Line 241)

"Seeing the Consultants and their decision making processes has made me be a bit more comfortable with uncertainty and there was not necessarily a right or wrong." (Tina Line 197)

Through working with different supervisors in different settings, the doctors were able to see complexity, managing uncertainty and developing choices of options, rather than rigid rules.

3.3 Stage 3. The opportunity/ requirement to make more complex decisions

There was a recognisable process of doctors taking on more decision making roles. Some of the doctors could force themselves to make decisions, while other doctors were forced into making decisions. Whichever was the case, this step was important because it was a hurdle that they needed to go through, albeit in a protected way. Several described similar concepts:

"You have to start making decisions or deciding, not necessarily making a finite decision...Even though you need someone to agree that plan with you or kind of oversee it, you've still got to make "what would I do" kind of decisions. So what helps is actually thinking through and making those decisions even though you're checking with someone else." (Ellen Line 348)

“You only really learn by doing things yourself. And I found the most useful thing is making your own decisions and making a plan, but then have somebody else say “yes, that’s fine, or have you thought about this?”” (Kate Line 189)

“The best situation for learning early on was when the Consultant reviewed the patient and then asked me what I would do. That can be very good because it’s a very safe environment to make decisions. But you know that you’re not going to do anything wrong because the Consultant’s there as a sort of buffer. It did give me the confidence that if I was wrong, they could intercept the plan. But mostly they added things, so it was quite a safe place to try your ideas without taking the risk.” (Tina Line 287)

Although each doctor was describing a slightly different process, they were all making actual or virtual decisions under a degree of pressure and with support. They either forced themselves to make a decision prior to seeking affirmation, or their senior asked for their decision. This raised an interesting area, because of the potential for doctors who were not self-motivated to miss out on this process if not pushed by their seniors. They recognised that to experiment in starting to make decisions, they needed a safety net to be able to take the risk of possibly making the wrong decision. Without this safety net for the doctors, patients potentially were at risk which affected the confidence of the doctors to make decisions on their own.

Ellen summed up the importance of this step- having to make decisions but with safety built in:

“I think ultimately you have to make that transition to when you start to feel like a doctor, I think that is when you feel like you’re able to make decisions. And I think you only ever get there unless you’ve actually had to make it. That’s why nights are great because there’s so few people you just have to make a decision, make your judgement and that’s it. I think that’s the only way to develop decision making- to do it, in the safest possible way.” (Ellen Line 439)

John went further, feeling that without having to make decisions and feeling ownership for his patients, a key element of learning was missing:

“I don’t believe I had any knowledge coming out of medical school.... It was only when I started working. and I was given the responsibility and my assessment and management plan mattered to the patients I was looking after but also the team I worked in. (John Line 379)

This reinforces the view of the trainees that development in this area occurred when they were actively involved in the decision making and taking responsibility. This was not always a comfortable experience, but one that trainees saw as important:

“Sometimes you’re forced to make a decision... So I suppose it’s when you’re on call at night, in A & E, when you’re on your own and there’s always senior support but it’s a bit removed, and you have to make an initial decision. That’s when you learn the most, even though it can be a bit frightening.” (Tina Line 200)

“It can be hard making that change from when you start out and you won’t be making decisions for yourself, and then it’s trying to decide which decisions you’re confident about making. Which is more often than not just when you’ve experienced something similar that you can then draw upon that experience.” (Tom Line 314)

The end result of acquiring a range of experience was to build up a more intuitive decision making process, consistent with the Dreyfus model (Dreyfus 1986), that was hard to describe:

“You’re confident learning from your own experience- not only what you perceive to be a sick patient or a well patient, and I often think you start to make that judgement as soon as they walk through the door.” (John Line 204)

Making decisions for themselves was often uncomfortable for the doctors but it was crucially important because it stretched them further on the development process.

3.4 Stage 4. Starting to help others develop their decision making skills

To understand why certain decisions are made, the training doctors needed to understand why their seniors made the decisions that they did. As the medical hierarchy evolved, and the doctors moved up the training ladder they started to become a senior to a doctor more junior to them. This started off by simply being asked questions:

“For a night shift I was the most senior doctor doing it, so people would be asking me for advice I suppose, and at some point you’ve got to make a decision.” (Anna Line 230)

It evolved from that to something much more positive, the recognition that teaching others was part of their role and could be very helpful for both parties:

“It was positive because I was able to pass on what I’d learnt to teach to junior doctors that I work with as well. I felt that was a positive way of applying what I’d learnt.” (John Line 357)

“It’s what worked for me, so I try to use that with the juniors as well in terms of “right well, what’s your management plan going to be?”” (Dave Line 360)

“Supervising more junior doctors gives you more confidence about your decision making because you can see more progression and it gives you confidence that I feel more comfortable making decisions about that now when

you can see that they're not. That gives you confidence that you're improving as a doctor." (Tina Line 357)

The doctors were able to see that they had progressed from where they were. In addition, for their juniors to learn, the doctors needed to be able to explain the decision making rationale. This perhaps marked the end point of the continuum, having skills sufficiently sharpened to be able to share them with others. In my study only some of the doctors got to this point but it seemed to represent a helpful and significant step: to make complex decisions, to be clear about the rationale behind the decision, and finally to be able to articulate to others as well as helping them develop their own skills.

The components required to build up experience are complex. Ben and Ellen tried to summarise what gaining experience was for them:

"It's just seeing a broader range of patients, seeing other people have those sorts of discussions with patients and watching how they do it... It's progress over time you feel confident to do a little bit more each time- it's hard to explain!" (Ben Line 351)

Ellen described a very similar process:

"Experience: coming across different situations and having a broad experience and then that helps your decision making. You know that in a similar situation you made this decision and it worked." (Ellen Line 367)

This captured the case mix, seeing different ways of managing conditions, but perhaps misses some of the more subtle influences. The process seemed to start with building up "everyday" decision making by seeing large numbers of patients with different problems and getting immediate feedback. From developing skills in pattern recognition, the doctors were then able to move on to more complex cases, seeing variations in cases, management and testing out their own decision making skills. For some doctors, they were then able to pass on their thinking and strategies, or to challenge decisions which they felt were incorrect. The challenge to this progression is that training doctors do not always go in a step by step way through training and the cases they encounter. This led to thinking about aspects that also contributed to experience, but perhaps in a more random or opportunistic way.

3.5 Critical cases

Originally the plan of this study was to ask about a significant case in the doctor's training as a means to opening up a discussion about decision making. However, it

became clear early on that patient stories, or narratives capturing the complexity of the situation, formed an important part of their development. These are described as “critical cases”, in this context meaning cases that have an important contribution to make to the training of the doctors in this study. Jackson *et al.* (2005) described the relevance of study in this area because of the important interactions with patients that can shape how physicians care for patients in the future. It was about the cognitive and emotional impact of individual patients on the training of an individual; or the challenges posed by a unique situation. The power of individual narratives was especially relevant when doctors found themselves in situations which reminded them of a previous patient, or an amalgam of similar cases.

A short description of the individual difficult cases is included in the appendix. Individual patients could often leave an indelible mark on individual training doctors. Sometimes this was a traumatic experience such as that described by Jane:

“It was awful, it was so horrific, such a horrific way for this poor woman to die... and I think it just threw me... It was such a bad outcome because you know... I felt bad because I felt like I hadn’t realised how sick she was when I’d first been called to see her. And so I’ll always remember that kind of grey clammy sort of vacant... just wasn’t quite right.” (Jane Line 255)

This was not an untypical situation- a distressing experience for the doctor, which served as a useful learning experience, but probably left an emotional scar also. The cumulative effect of these sorts of experiences is unknown but how the doctors rationalise and achieve closure on difficult experiences may determine whether it becomes a learning experience or a source of stress and possibly burnout. The medical literature has a number of studies showing the stress associated with dealing with difficult cases (Vachon, 1998).

Many of the experiences were also happy ones, where the doctors felt they formed a particular bond with a patient, or there was some other reason why they played a major role in the doctor’s development:

“It’s one of those patients I think which will always stick in my mind, for the rest of my life. You don’t know exactly why this specific patient. Some of the patients you just become more attached to and you wish you could have changed it in a different way for them, could I have done anything differently? You always compare patients with certain ones from the past... You take a lot with you, how you can improve things and what are important, what you’ve done right and not so good, a lot of things which I’ll take with me.” (Freya Line 317)

Having a sense of connection with a patient or relative, or a greater degree of responsibility for the care, have been suggested as factors which amplify doctors emotional responses to a case, and therefore how much they stay in the memory (Jackson *et al.*, 2005). Much of medicine is about narratives- positive and negative stories can both provide powerful learning.

There were a number of circumstances which could make the case more challenging than a routine one. The doctors sometimes found themselves in a new situation. Tom's case was difficult because he was seeing a new patient in a new environment that he was not used to:

"I hadn't met her before.... I was quite new to the practice.... I got advice from the staff at the nursing home..." (Tom Line 19)

Part of Tom's difficulty was that he had no relationship with the nursing home staff, but was entirely dependent on them for information in building up a picture of what was going on. This meant that he had no basis for working out how much weight to give to particular views or being able to judge how skilled the staff were at assessing or managing a particular problem.

Ellen found herself in a situation where a patient with mental health problems formed a strong bond with her:

"It was a unique situation in that he wouldn't go and see the Consultant or any of the GPs.... I was the only one, it was me or nothing." (Ellen Line 269)

The difficulty was that the patient then started to develop increasing mental health problems:

"I felt quite a weight of responsibility. I worried about it, despite discussing it.... My worry was- is he a risk? I was the only person who's seen him... It's a big burden." (Ellen Line 275)

Often difficult decisions occurred out of hours when doctors would have little access to information about the patient:

"It was about 11.30 at night when an elderly man was admitted to A&E. I didn't have much information on him because the GP who had seen him did not have much information about him... If it had been during the day, I think I would have been able to access a lot more information." (Kate Line 7)

Or out of hours when the doctors had less help, in terms of people or investigations:

“The evening I was there was Saturday when the nurse came to tell me, just as I was going home.... “her heart rate’s 200”” (Bob Line 10)

Difficulty could arise because something unexpected was found when one of the doctors assessed the patient. John had gone to see a patient prior to his transfer to John’s ward after a Consultant review:

“I guess I wasn’t going over there thinking I needed to make a decision about whether the patient was coming back to us, because that decision had already been made...However I don’t believe the information I’d been given was correct or maybe my assessment had been different to what had already been done.” (John Line 37)

Tom probably would not have done a home visit on a patient, had the initial referral been correct. Instead one of his senior colleagues might have seen the patient:

“From the description, we’d got, we hadn’t expected her to be as poorly as needing an admission. I think that if they’d thought she had deteriorated so much, probably one of the GPs themselves would have gone to see her.” (Tom Line 88)

Similarly, Freya was allocated a patient in her GP practice to visit who was thought not to have anything significant:

“So I thought it was a pretty sort of straightforward phone call, there was not much of a medical history with her... So when I went to see her I felt it was going to be an easy sort of home visit.... I had a look at her- I could immediately see that she looked... jaundiced.” (Freya Line 15)

In Ben’s case, although the patient has severe health problems, his condition had been stable and so the sudden change in condition had not been anticipated:

“He’d come in for a week’s respite, and there was nothing active as far as was documented or people were aware, and he had a routine catheter change during the day.....And then I was called in the middle of the night because he’d not passed urine since, and then started to pass lots and lots of blood....” (Ben Line 122)

In all of these situations, the difficulties arose because the doctors found themselves in unfamiliar circumstances, had limited information or something happened that had not been anticipated. As with many of these aspects, the learning could be ultimately helpful for the doctors as long as they learned or were able to take something positive away from the situation, rather than feeling despondent. Rees, Monrouxe and McDonald (2013) highlight the importance of the dilemmas and narratives of

memorable cases in clinical learning. Schon (1983) talked about the “swampy lowlands” of professional practice compared with the “hard, high ground”. By this, he was contrasting straightforward problems with clear solutions (high ground) with messy and confusing issues with often difficult solutions (swampy lowlands). In this section, the doctors are dealing in the swampy lowlands, where unusual or difficult circumstances made the cases more challenging. It appeared that those doctors who had built up experience on the high ground were able to understand and navigate through the more difficult circumstances. Some of these issues are summarised as factors that accelerate or inhibit development:

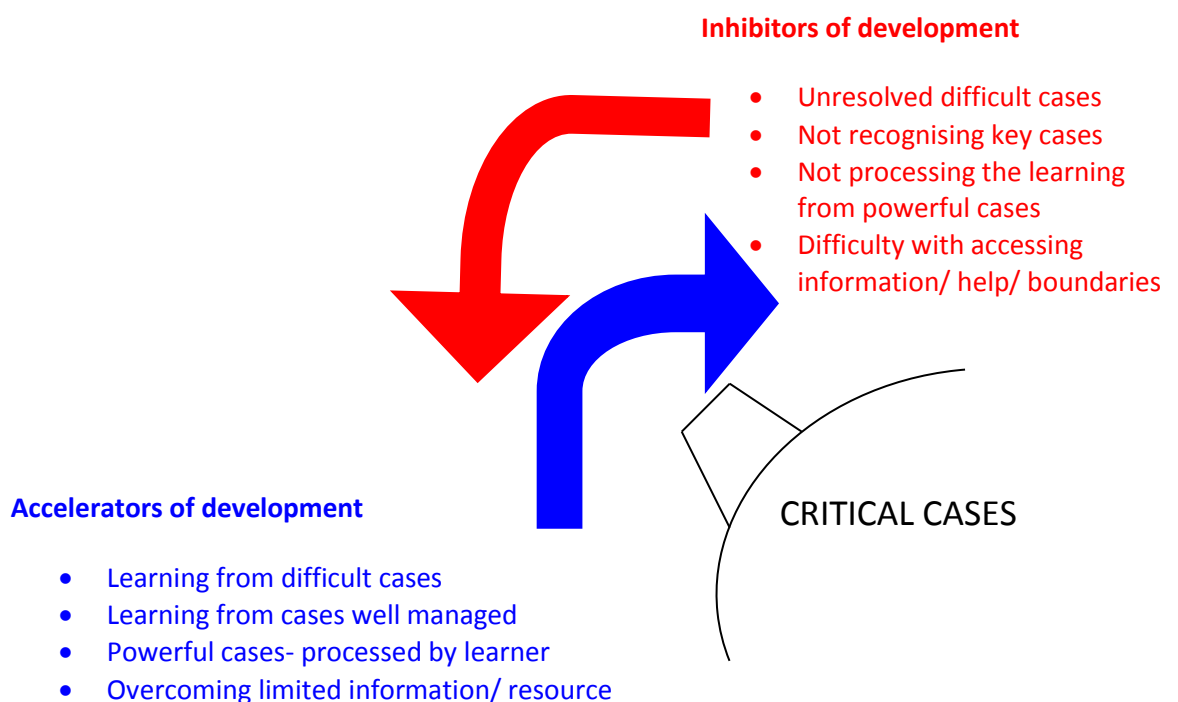


Figure 3.2 Critical cases

3.6 Reactivating prior experiences

Knowing the patient from previous encounters was helpful because it meant that their current state could be compared to the previous assessments:

“I was pretty convinced from his clinical signs that he had quite severe... heart failure. And that was why he had deteriorated; obviously I knew that wasn’t a problem that he had whilst he was with us” (John Line 12)

“The thing that struck me as well was how much more frail he was since he’d been with us, so I’d actually seen a big deterioration in him. Just from my own observations, I witnessed that deterioration. Particularly as I hadn’t seen him for a few weeks I guess that was more stark to me as well.” (John Line 86)

Prior knowledge was extremely helpful where the situation and management had been clear cut, but in situations where the course of the patient's management was vaguer, it made little difference:

"It had been a lengthy stay because she does have days where she looks like she's getting confused and then a small course of antibiotics and she's better. So her situation is grumbling on, not really sure which direction it's heading in."
(Bob Line 8)

When faced with difficult decisions, it was important that the doctors were able to utilise as many sources of information as possible. This might include patient information, examination findings, talking to the nurses, looking at treatments tried:

"From the history of the nurses..... Looking back through the drug chart he had..... He had been getting increasingly..... On clinical examination he....."
(John Line 52)

"The nurses gave me a kind of brief; I looked through the notes and went in to see the patient" (Jane Line 19)

Sometimes they had information but the vagueness of it meant that if anything it placed an extra burden on the decision making, rather than helping:

"The nurse who came with him said that this man had advanced dementia, and had been in hospital quite a few times recently and the hospital had felt that he wasn't really to be transferred back because it would not benefit him... But I wasn't aware of why he had been previously admitted and whether this was something new... If I hadn't had the information that the hospital had said not to transfer back, I would have just treated him...." (Kate Line 10)

Poor quality information was a repeated issue in making decision making difficult:

"You walk into this quagmire, and you don't really know why decisions have been made, because notes are appalling. We always document the decision that's been made but nobody ever shows why decisions have been made" (Cath Line 252)

Knowledge of the patient could come from previous contact, the notes and colleagues, but the quality was variable and sometimes posed as many dilemmas as it was helpful. Doctors cannot rely upon seeing the same patients or always having appropriate information, so perhaps more important was to see patterns between patients. When the doctors came across situations they had seen previously, the ability to recognise a similar circumstance helped them to make a similar decision:

"I got in in the morning and he wasn't responsive, and he wasn't taking his medications anymore....And I guess that comes from experience of seeing lots of people go from a place of being conscious and being able to take tablets to

being semi-conscious and not being able to take tablets. My experience of when those things happen, it tends to mean that he is dying.” (John Line 159)

Jane and Tom described situations where they knew something was seriously wrong as soon as they went to see the patient:

“She just had that kind of look, I guess I only knew because I’d seen people before, in my experience of kind of, she was very grey, very clammy, looked quite vacant, and a bit confused, and she just looked like someone who had had a big event, either cardiac or possibly a pulmonary embolus.” (Jane Line 25)

“But I could see that she looked really quite poorly... and just not very alert.” (Tom Line 12)

Freya recognised that although her patient could have multiple causes for their problem, in this case it felt different:

“I’ve seen a few patients before who have come in with a few days history of jaundice and they were diagnosed with pancreatic cancer... I just had the feeling that she sort of fitted to this category...” (Freya Line 32)

Similarly when taking decisions, having seen a case managed in a particular way made it easier for the doctor to take harder decisions:

“Having seen similar examples in the past I suppose you have that in your mind that it’s been done before and that it’s reasonable and people to do it...” (Tina Line 102)

There was a range of case recognition from what Eraut (2007) described as “instant/reflex” pattern recognition which was almost automatic to more deliberative processes where the doctors were able to look at previous cases and explore the similarities and differences. When the doctors were able to walk into a situation and recognise it as being similar to a previous experience it made a significant difference to their confidence in dealing with it. That applied to working out what the problem was as well as the management of the case. For this to happen, the doctors needed to have a significant case experience and be able to recognise the similarities and whatever differences there may be. The diagram below summarises the key areas discussed:

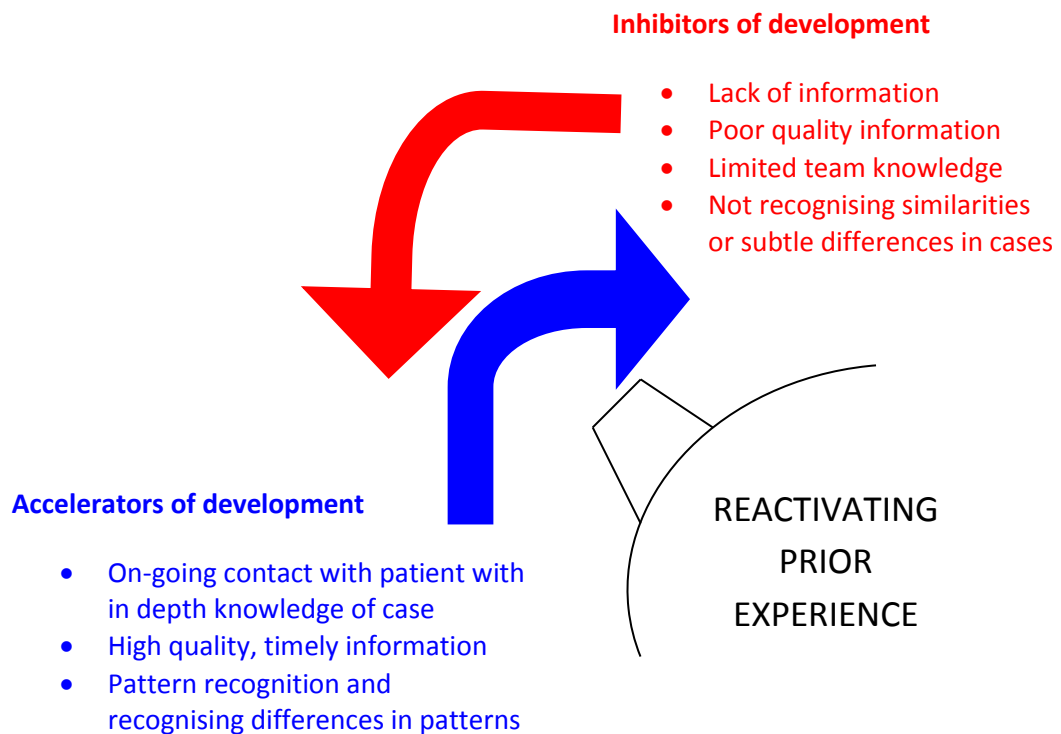


Figure 3.3 Reactivating prior experience

3.7 Deviation from the protocol: challenges to straightforward decision making

The final area considered in this section is in relation to situations where the doctors found their management plans needed to be modified for a variety of reasons. This challenged them to individualise care and they really then had to weigh up the reasoning behind decisions. Freya found herself in a situation where there was something seriously wrong with the patient but it was her 80th birthday:

“I was left thinking “How much shall I tell her right now? How much should she enjoy her birthday? Should I investigate this straight away or can this wait for a few days?” (Freya Line 34)

After delaying till after the birthday, Freya was then faced with having to sort out care for the patient’s dog before the patient would accept an admission!

A hard decision for the doctor to make might have been because they knew what treatment would work best, but that it might have a side-effect that could harm the patient:

“I was obviously aware of the risk, there was a risk because she had had bleeding, but tried to weigh up the risk and the fact that that was probably the most beneficial pain relief for her..... The risk involved was there, but we were probably talking about a short space of time because the lady was dying anyway.” (Tina Line 36)

Tina was clearly trying to weigh up the risks/ benefits and for her the risk became less of a problem because the patient was not expected to live very long, and comfort was then paramount. Tina felt that the risks needed to be proportionate to the situation.

Freya needed to weigh up the risks of doing something or waiting:

“Needed to decide “what needs to be done right now?” She wasn’t well, but not so unwell that she needed hospitalisation straight away. So basically what I did was I didn’t want to reveal too much, because it was a little unfair on her birthday. I told her it was a bit unusual, and said we would investigate it.” (Freya Line 38)

Freya was weighing up the risk of delaying investigations in a serious situation versus letting the patient try and enjoy a family occasion:

“I think from my point of view obviously the dilemma was being safe and admitting her to hospital straight away.... And I felt the safest thing would have been to admit her straightaway”. (Freya Line 142)

For Jane in a different scenario, she felt she knew what the problem was, but that all options had potential problems and she was not sure what to do for the best:

“I didn’t feel I could give her Because she had no blood pressure and I didn’t feel I could give her fluids because she was in heart failure.... Her story was complicated and I just didn’t really feel happy.” (Jane Line 38)

Ellen had to weigh up the risks of her patient’s mental health problems against risking the therapeutic relationship she was developing:

“The psychiatrist said: “I don’t think he’s sectionable. I think you need to try and build a therapeutic relationship with him, to persuade him to try and start on medication.” And generally my feeling was that he was psychotic but in a harmless way, but you don’t actually know that. So there were those kinds of pangs of anxiety...you had to be sensitive in any decision you made... to not lose that one link he has with the health care profession.” (Ellen Line 266)

Many of the difficulties arose because the management of patients might have been straightforward but for a number of situational circumstances that challenged the obvious management plan. Here individualising the decision making and sharing the decision making with patients was of importance. This step resonates with Coles’ description of being a professional: “being professional starts when the protocol no longer helps, for example, when the evidence suggests one course of action but the professional decides to take another or maybe to do or say nothing at all” (Coles, 2002)

Where a patient was able to express an opinion it made the decision making more comfortable:

“I said to him that we would look after him and make him comfortable.... And he just said to me “I just want to die doctor.....I just want to die... I wish people would leave me alone to die.”” (John Line 100)

John felt that this was a very clear message but it still posed the dilemma as to whether the patient felt that way because he felt so ill from a potentially reversible problem, or because he had genuinely had enough. In Tina’s situation, the patient’s view was significant in affecting the decision:

“I think if the patient had said that she was worried and wanted to try something else, then I would have done.” (Tina Line 130)

On the other hand, in situations where the patient was not able to communicate, it made managing difficult situations much harder because the doctor had to work out how the patient or others might want the situation to be dealt with:

“If I was the patient’s family, you know, what would I want to happen to my relative, should I look at it from that point of view, and how other healthcare professionals might see it if they were in my position.” (Kate Line 73)

“So I went to see her on my own and I wasn’t able to take any history from the patient, because she was a lady with quite advanced dementia and didn’t have any verbal communication.... The issue was where to manage her and she couldn’t consent to any form of treatment.” (Tom Line 9)

This could present dilemmas where the doctor felt they probably knew what the patient might want, but it was at odds with the conventional medical treatment:

“I thought I should just ask her what she feels about it. And she says “ok” but actually I know that wouldn’t be her normal answer if she was not delirious. So I felt a bit uncomfortable because I know her trend is, she hates going to hospital, she goes in under duress” (Bob Line 20)

Bob found this quite disconcerting, having to work out how much a change in attitude was down to delirium and what might be a change in opinion:

“She said “yes” which shocked me a bit because I think if she’d said “no”, I think it would then have made it a bit easier....because in the back of my head I know she doesn’t really want to.” (Bob Line 35)

Lack of input from the patient or family was a major handicap in dealing with difficult, unexpected changes:

“He was a gentleman who wasn’t able to communicate, and didn’t really have much non-verbal communication because of his lack of movement... And his wife was away, and was on holiday with a family member...” (Ben Line 128)

In Ben’s case there was also a statement in the notes:

“It was having it written in the notes very clearly that he didn’t want to go back into hospital. And that was from his wife” (Ben Line 164)

The difficulty was the statement on one level was black and white, but did not demonstrate whether the patient understood the consequences of not going into hospital in such an acute situation. When Ben was able to speak to the patient’s wife, the wishes were much less clear cut, and there were situations where a hospital admission would be considered.

Anna found consulting her patient’s family helpful:

“I discussed whether their dad had any sort of advanced wishes about in this situation what they’d want doing. Turns out he hadn’t really, and whether they had any thoughts on it. They thought they’d have to wait for more family members to come in.” (Anna Line 63)

She also felt when making a difficult decision it made it easier if the family were on board:

“I suppose it was a medical decision, but you want to do that with the family’s backing and it probably would have made me think again if they’d disagreed.” (Anna Line 84)

Tom found himself in a slightly different situation, having consulted a patient’s next of kin. The son was very supportive and acknowledged Tom’s dilemma, and asked Tom to do what Tom thought was best, and he would back Tom’s decision:

“He was saying to me “I want you to do what’s going to treat her and if she can’t be treated, give her the best care in the home....” (Tom Line 66)

In many ways Tom found this harder. The patient lacked capacity to help in the decision making, and Tom was hoping the son might help guide him in a particular direction. Tom was used to more participatory decision making and was being pushed to make a decision on his own.

Consulting with the family to inform decision making relied on the family and doctor seeing the same situation, which was not always the case:

“She believed her mum was really ill, very ill, when we thought she wasn’t at that stage. She believed her mum was dying at several stages when we didn’t think so at all....But then when acute things happen, when this acute thing happened, her daughter is convinced, maybe rightly, and doesn’t want her mum transferred to an acute hospital....Thinks we’re absolutely bonkers to be transferring her, because if she’s dying from this...Why don’t we just let her die from this?....It was very uncomfortable. You kind of know where she’s coming from, but then you know that she may not die from this. She always felt that her mother’s a lot worse than we’ve assessed” (Bob Line 50)

Bob felt, knowing that there had previously been differences in how the medical team and daughter had seen the situation, that this made it hard to interpret the current view of the daughter in helping decide the management plan. In Bob’s situation the discussion with the daughter became more heated which added to the situation:

“She didn’t want to hear it. She was really quite angry and saying things like: “Haven’t you seen these things happen before in other dying patients? Trying to get her to understand that I didn’t feel she was imminently dying, it was weeks or months away....She was sure her mother would be dying in the next one or two weeks. She had her own time frame in her head....” (Bob Line 203)

With one or two exceptions, the doctors found working in partnership with the patients extremely helpful when the situation was difficult. This fitted with the principles of shared decision making, a major thrust of clinical decision making and designed to improve decisions being made through partnerships between patients and their doctors (Godolphin, 2009). With families, the experience was more mixed- the doctors often felt the family input would have been helpful but was not available. When it was, it could often be very useful. However there were occasions where the consultation with the family, although pleasant, did not further the decision making. This may represent an unrealistic expectation of the contributions families were able to make to such life and death decisions. Problems also occurred where families and doctors were not in tune with each other’s understanding of the situation.

Some of the key aspects around making decisions that were individualised are represented below in terms of experiences that helped or hindered the process:

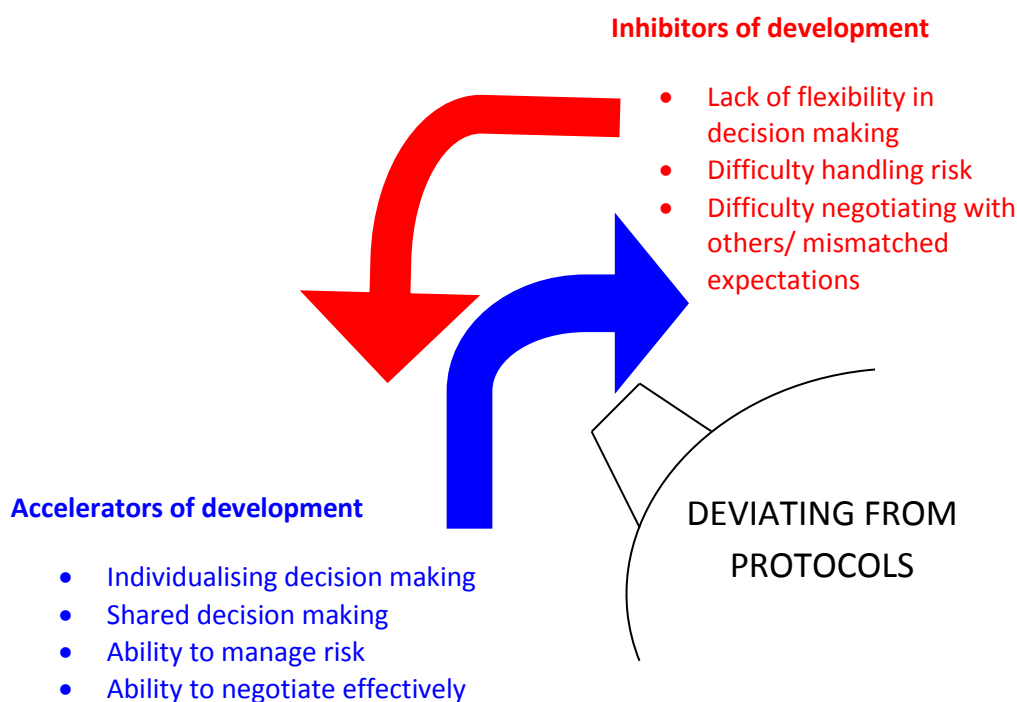


Figure 3.4 Deviating from protocols

3.8 Summary

This chapter has described the process of gaining experience in decision making which the training doctors went through. It has been considered as a recognisable continuum of stages which the doctors seemed to go through, resonating with the work of Dreyfus. Additionally a number of important components have emerged which do not clearly fit into a continuum: critical cases, reactivating prior experience and deviating from protocols. These were important in helping the training doctors to make more complex decisions but seemed to occur more randomly. The training doctors who seemed to have more developed decision making skills were those who had “greater experience” even if they might have been earlier in their training with less accumulated time. This occurred due to influences on the process of “gaining experience”. The next two chapters will concentrate on key influences or mediators of this process: internal and external challenges.

Chapter 4. Data 2: Internal challenges: interaction with self

This chapter explores the issues or interactions taking place internally for the doctor. While initially my thoughts were that the environment would be of paramount importance, throughout my interviews I increasingly felt that people could encounter the same situation but it would have a different impact on them. The only way that could be explained was due to their internal response to the environment, another angle to explore and develop.

While the subsequent data chapter focuses on the interaction between the doctor and the environment they work in, or with patients, this chapter looks at internal issues. These were not necessarily areas identified by participants, but emerged from my analysis. This is about inner resources the trainee sometimes had or internal battles the trainee sometimes had to overcome to thrive and develop their skills. As with the other interactions, this could be positive for the trainee, uncomfortable where they were forcing themselves to do something that would be beneficial but painful, or potentially detrimental where perhaps they avoided something that could be beneficial to their development. As the chapter unfolds it will become clear that several aspects could be ascribed to the trainee's character, some of which could be developed or overcome, while other areas are clearly ripe for development and could be taught or learned.

The following aspects are covered in this section:

- Taking responsibility for learning: assertiveness and resourcefulness
- Resilience/ Self-esteem
- Making decisions
- Rhetoric
- Creating space and time
- Higher thinking
- Meta-awareness
- Post-script: reflection and closure

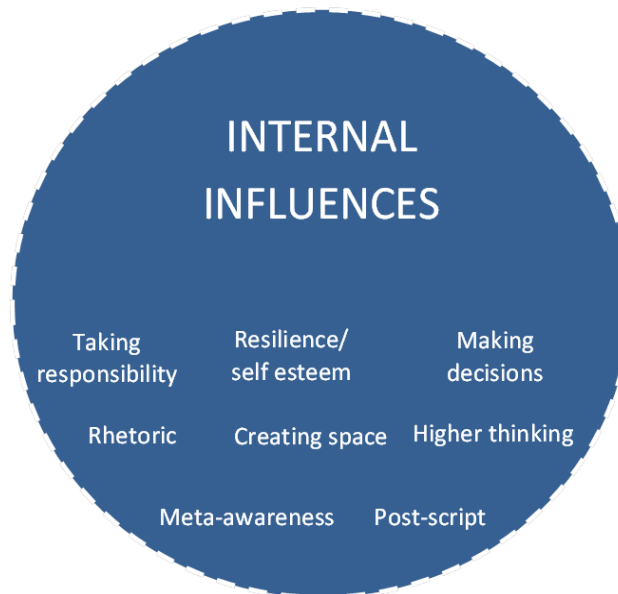


Figure 4.1 Internal Influences

4.1 Taking responsibility for learning: assertiveness and resourcefulness

The next chapter addresses the interaction between the training doctor and their clinical environment, focussing on the environment the doctors enter. It may give the false impression that doctors have a passive role in this process, especially when it is not going well. In other words, if the environment is good, they will flourish and if it is poor, there will be more of a struggle. That was not the full picture, because individuals used their own resources to get more from a situation. To interact with the learning environment, doctors needed to be able to take advantage of opportunities that were there or to look for them. Where the opportunities were presented to them, this was straightforward, but a key area in this study was about the doctor’s ability to be more assertive and find the opportunities to learn. Doing this enabled constant development but proved more difficult for some.

It was very important to get feedback on their performance for doctors to improve their decision making skills. Sometimes this was volunteered by their supervisors, but often this was not forthcoming unless they specifically sought feedback to test whether their decision making was correct. John and Kate both described their own comfort with seeking out help and the response that comes back:

“I would say that I’m quite confident and I find asking the group of GPs at coffee easy as long as I’ve got a good working relationship....” (John Line 295)

“I’ve never been shy in terms of coming forwards, but you know just to help me understand why that decision was made. And the vast majority of people have gone through their decision making process.” (Kate Line 204)

Eraut (2007) identified “Asking questions and getting information” as an important process in the working environment, in developing learning. Where doctors felt able to seek feedback, they gained from the resultant learning. Doing this required assertiveness and the doctors to be clear what they were seeking from their feedback. Being able to put yourself forward was important, but it was also important to be focussed on using that time effectively. Bob felt in discussing the management plan it was important for him to be clear about what he wanted from a discussion:

“I think I have pretty strong opinions in certain situations, so in those situations, I’d be telling them my side of the story, so my decision, and trying to get support or agreement. In certain situations, I’m ringing for their honest opinion where a decision could go either way.” (Bob Line 326)

John felt it was not just about getting feedback, an important part of the learning process was to take the lead in getting feedback:

“I actually felt I’d learnt the most when I felt like I had to take responsibility for my own decisions- I’ve had to take personal questions to people to ask them.” (John Line 309)

In seeking help from their seniors, being clear as to what help they wanted was important, being explicit in their request elicited a more positive response:

“I usually phone and explain the situation and say this is what I think but could you reassure me that this is right or not. Unless they’re much more complicated in which case I tell them that this is over my head, I need somebody senior to come and sort this out. In which case most people are pretty supportive and approachable.” (Jane Line 175)

Other doctors, particularly those less experienced struggled to be assertive, and sometimes found it easier to say nothing. Jane in a separate situation, described a difficult scenario where she had tried to suggest a change of management but had found it hard to speak to the Consultant, and had gone through another junior doctor instead. She felt that in not being assertive, although it had seemed easier at the time, it back-fired and affected her relationship with her supervisor:

“But then word came back. And then I felt really awful. He’s going to think I’m really awful for questioning him, and he overruled me, and that wasn’t nice. And maybe it would have been better if I’d approached the Consultant myself and expressed my concerns....” (Jane Line 399)

Assertiveness seemed to be crucial, having the confidence to approach seniors or approaching them even though it felt uncomfortable. This is challenging because other work has shown that medical trainees are reluctant to ask for help in case it undermines their clinical credibility or how they appear in front of colleagues (Kennedy *et al.*, 2009a, Stewart, 2007). This may therefore be a key area in accelerating development.

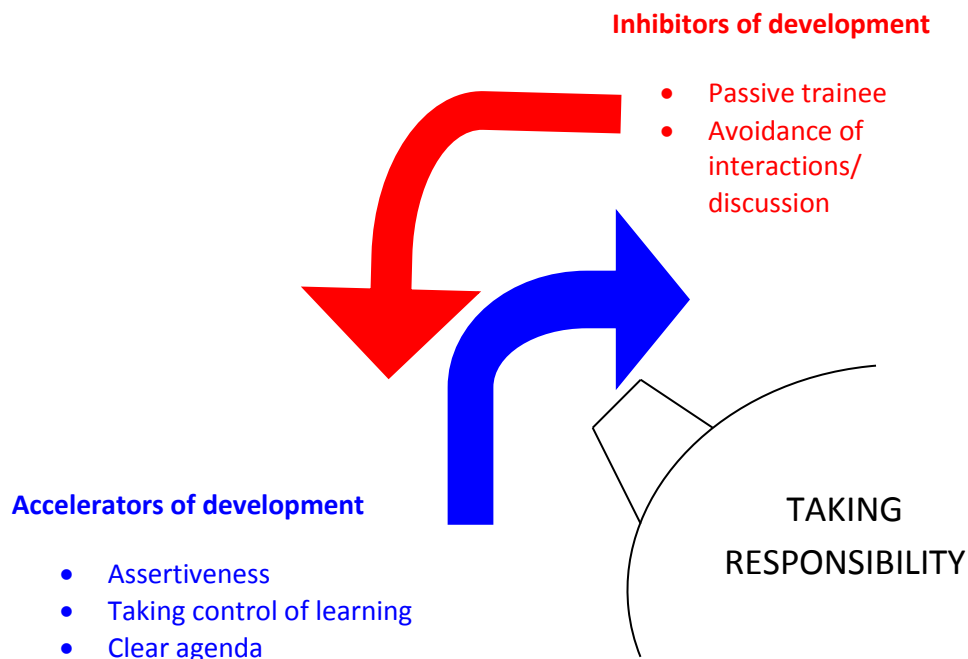


Figure 4.2 Taking responsibility

4.2 Resilience/ self esteem

Resilience has been defined as “the ability to succeed, to live, and to develop in a positive way ...despite the stress or adversity that would normally involve the real possibility of a negative outcome” (Cyrułnik, 2009). Doctors may be particularly at risk of suffering stress because of the regular potentially traumatic experiences they encounter, particularly if they have been passive or unable to intervene (Howe, Smajdor and Stockl, 2012). Resilience is dynamic and can allow people to thrive on challenges or cope with adverse events.

In the interviews, doctors talked about negative experiences, particularly with senior colleagues. Their reaction to that experience had a major impact on their experience of their job and what they were able to take away. Bob talked about the personal toll that could take:

“In environments where I feel like someone’s really not confident in me, I lose confidence in me. There’s an internal struggle really- it’s not about the other person. It’s me perceiving that no one’s going to support me now because they think I’m an idiot or they think I’m making wrong decisions. It takes much more out of me... it’s a lot more tiring and demanding if you’re standing on your own two feet with no team behind you.” (Bob Line 340)

Likewise Kate described a more extreme situation where she felt repeatedly undermined:

“I just felt like I was doing everything wrong. I was very low and nearly gave up medicine completely.” (Kate Line 293)

John, on the other hand was able to rise above the difficulties and even take something from his experience of working with a supervisor who was poor and difficult to work with, discussing also whether to raise the issue with someone else:

“The right thing to do might be to raise it, or whether to leave it to learn from experience. You can always take something out of it. Even if it’s just how to relate with other people, other colleagues.” (John Line 370)

Bandura (1994) refers to the idea of “self-efficacy” which influences how we perceive particular situations, and how we respond to them. People with strong self-efficacy are likely to view difficult situations as challenges and overcome setbacks, whereas those with low self-efficacy will avoid difficult situations believing they cannot achieve them, and to lose confidence quickly. It was clear from all the interviews that doctors had a variety of negative experiences. Their response to those experiences varied from being detrimental to their development to potentially using negative experiences to learn. John summed this up, describing the more immediate experience of the relationship with a trainer:

“It can be positive if you’ve got a good relationship with your trainer, who both encourages you but also constructively criticises the decisions that you’re making. But you can go the other way in a relationship where actually you just feel de-motivated and de-moralised if it’s not approached in the right way. I’ve had those experiences in the past as well....” (John Line 360)

A number of studies have looked at distress and burn out among junior doctors. Developing resilience, the ability to come back from adversity, is an important weapon against that. Peisah *et al.* (2009) carried out a study suggesting that more senior doctors had greater resilience than junior doctors, experiencing less psychological distress. A crucial part to this finding was that the senior doctors perceived that their earlier career had been much more stressful, but that they had gained experience which helped,

protected themselves more in their patient interactions and their working conditions had improved. This suggests resilience can be developed, though some people are more likely to come into situations with a better skill set already in place. Difficulty coping with clinical uncertainty is strongly associated with psychological distress (Bachman and Freeborn, 1999) - the area being investigated in this study is all about managing uncertainty.

Being a resilient learner, and being able to learn from both positive and negative experiences helped the learning process. On the other hand, losing self-esteem clouded the total situation for some, and that period of low self-esteem impeded the doctors' ability to progress. Resilience and maintaining self-esteem are important life skills. In medical training they seemed to be particularly important as there were a number of challenges to an individual's confidence. Those who were more resilient were able to survive and even flourish in those situations:

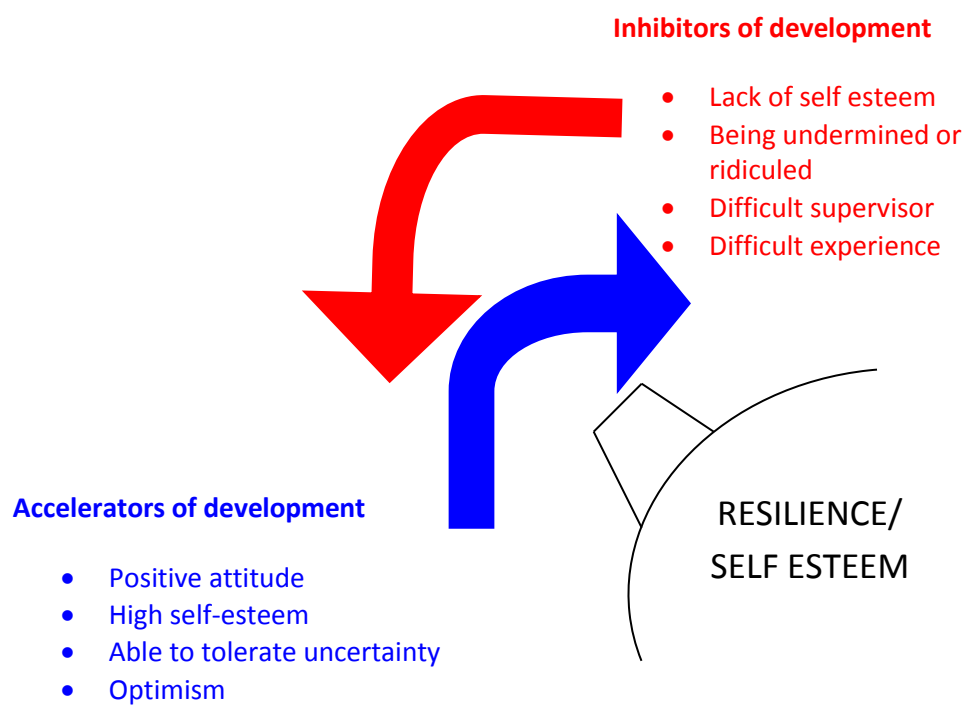


Figure 4.3 Resilience/ self-esteem

4.3 Making decisions- not avoiding them

At the start of their medical careers, doctors are normally well supervised and often others make the key decisions. Sometimes pressures of time can lead to senior doctors

making decisions without the important dialogue of discussing the management options taking place. Discussing their ideas was a key step before actually making decisions:

“I wouldn’t have wanted to make a decision. I probably would have asked my senior to make the decision, as opposed to speaking to them about what my ideas were and what I thought that we should do... If you’re the one that’s actually making the decision, I think you do learn more.” (Tom Line 225)

Even if not discussing with others, forcing themselves to think about the decision was important:

“You have to think “If the Consultant wasn’t here, well what would I do?”” (Dave Line 362)

This thought, discussion and then actually carrying out decisions was an important process that the doctors had to go through in order to develop further. Ellen described first the importance of thinking through the issues and talking about them, before she talked about the key importance of pushing yourself to make decisions.

“I think what helps is actually thinking through and making those decisions and checking them with someone. If you just do your assessment and then say “What do I do” then you’re not developing professionally. You’re just handing the decision over to someone else, and although that’s safe, it’s not good for your learning... Getting confidence in making decisions has been my big..a big thing that I..... you sometimes need to hold yourself back from asking someone and just try and make decisions otherwise you’ll never progress.” (Ellen Line 353)

Dave described his own experience where having forced himself to make decisions, and build up relationships with colleagues throughout the hospital, he was trusted more and this helped to develop skills further:

“It was about a good relationship with my colleagues as well, particularly core specialties, you got to know the Consultants very well. So they’d take your opinion a bit more as well. So I think being known, helped the decision making process as well.” (Dave SpR Line 244)

The doctors could passively hide from decision making if opportunities did not present themselves, or they could actively avoid making decisions, often for legitimate reasons. However where they forced themselves to make decisions, either virtual (through going through the intellectual process of decision making) or actual (both the intellectual process and carrying out the decision), they benefited enormously. “Trying things out” in a safe way is a key aspect of learning (Eraut 2007). Resourceful learners were able to make decisions, even virtual ones. This led to further development and reinforcement of the process. Apart from the importance of making decisions in the context of this

study, junior doctors avoiding making decisions is a recognised sign of a doctor who may be struggling (NCAA, 2004).

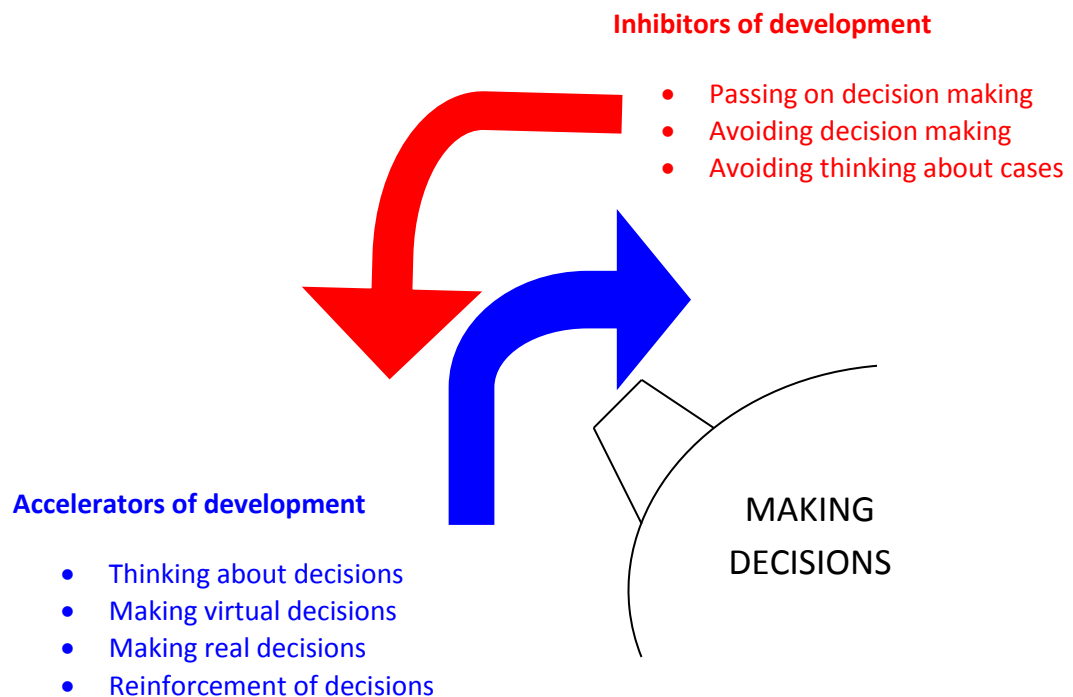


Figure 4.4 Making decisions

4.4 Rhetoric

Finding and being able to articulate their voice seemed to be an important aspect that the doctors needed to have. Some were clearly better at this than others. In her work on medical communication, Lingard *et al.* (2004) describes 4 critical factors in communication:

- content
- audience: the people taking part in the communication
- purpose: the goals of communication
- occasion: physical and temporal situation of an exchange

My data findings aligned with these four aspects of communication. Finding their voice initially was about navigating through the decision making process with their team. Being able to articulate exactly what they wanted from a situation was extremely helpful, especially when they were pressurised by time. The doctors found they got a much better response the more direct and explicit they were:

“There’s this, this and this, what do you think?” or “I found this in examination, will you come and look for me, see what you think?” (John Line 232)

*“I’ll quite happily say “would you mind explaining why we’re doing that?””
(Kate Line 204)*

Supervisors responded much better where it was clear what they were being asked for. This echoes the view of other work showing that supervisors respond much better to training doctors who have made the effort to think about the case and their plan, than those who come wanting to be spoon-fed (Kennedy *et al.* 2009a). Jane on the other hand, described a situation where she found it more of a struggle:

“Sometimes it’s really hard to know whether you’re giving too much information, or not enough. Sometimes they say “Give me a bit more information than that” and other times they go “well obviously this is the problem” before you’ve finished.” (Jane Line 320)

Part of the self-development was to work out what their message was, and sell it well so that it got the response back that the doctor required. Loftus (2012) described the importance of rhetoric, or having skills of persuasion as a doctor in order to succeed in their job. Much of medical life is about persuading patients, families, professionals and organisations to engage or do something. In this context it was about persuading their supervisors about their thinking, their objectives and the response that they required.

Later in their development, it became important for the doctors to develop their own voice, in terms of a view or opinion and to be able to put it forward or stand their ground. Several of the more senior doctors talked about situations where their assessment of the situation differed from that of other healthcare professionals. Bob was one example of this, expressing increasing confidence in his own decision making:

“The patient on ITU was fluid overloaded for iatrogenic reasons and everybody seemed to have given up. He had been fine a few days previously so I asked questions. The specialists who might have helped gave advice over the phone but did not assess him. He died the next day. I felt a bit helpless but thinking back now, those suggestions weren’t silly, with interventions he might have survived.... I think it’s your duty to ask questions, but I’m not comfortable asking them.” (Bob Line 258)

With increasing experience came the confidence that a training doctor had their own views and that they were valid. They became more confident at standing their ground where that was needed:

“You always get people who you work better with and whose opinion you trust more, they might have met the patient before also. On the other hand, if it was somebody who I didn’t necessarily trust, then I think I would have just argued my case...” (Kate Line 94)

Difficulty could arise because the plan that the doctor felt was correct seemed to be at odds with a plan generated by someone senior. Although they felt the decision making was clear-cut, it became difficult because of the politics of seeming to overrule someone more senior:

“I felt really stuck because I basically rewrote the drugs that had been crossed off earlier. I thought this wasn’t the best way to do it, I’m just basically challenging the Consultant and going against what was written in the ward round notes. But you know, we had documented why, and so I stuck to my guns.” (Jane Line 152)

Although doctors could have their own opinions, the act of articulating them, even if at odds with someone else, was important because it demonstrated their own thinking ability, and the ability to explain, rationalise and justify their thought processes. Communication failures within medical teams sometimes arise because of hierarchical structures which inhibit discussion. Sutcliffe found that communication was likely to be impaired or not take place in situations where one of the communicators, usually the junior one, is concerned about appearing incompetent, does not want to offend the other, or perceives that the other is not open to communication (Sutcliffe, 2004). These findings were clearly an issue among the junior doctors, those who were able to overcome them were more successfully able to take advantage of the situations or opportunities available. The diagram below summarises the findings:

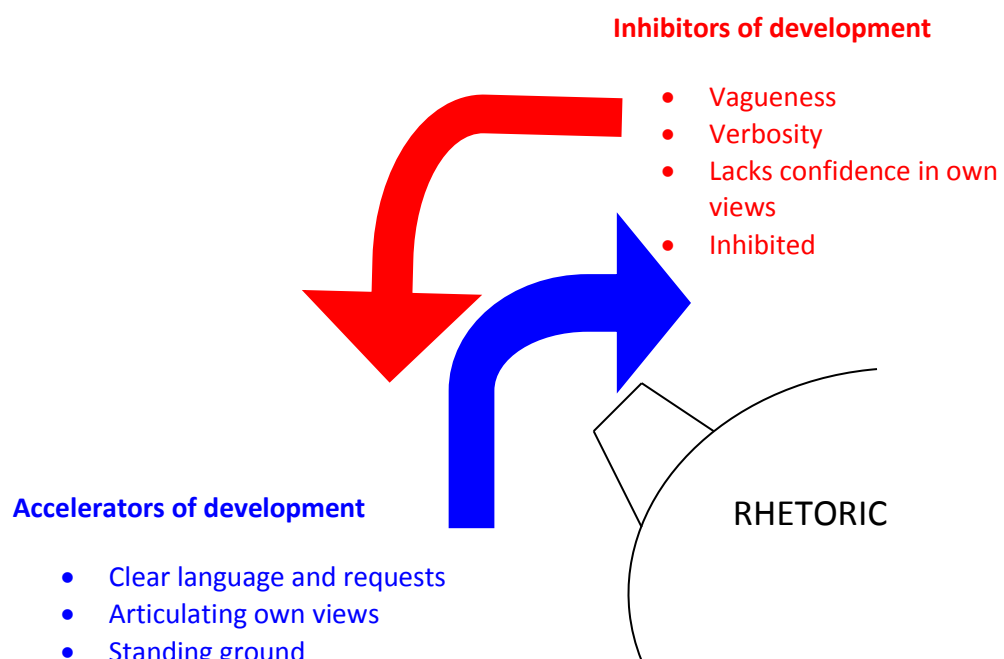


Figure 4.5 Rhetoric

4.5 Creating space: Urgency of decision making and creating thinking time

Sometimes the decision making process had to occur extremely rapidly because either the patient was deteriorating quickly or in John's case because an ambulance was present waiting to move the patient:

"As I'd done my assessment, the ambulance came" (John Line 20)

John was assessing a patient who had already been seen and a plan put in place. He had to quickly make a decision about whether the plan to transfer the patient to a particular place was the right one, or whether he should cancel the ambulance. That in itself would have been a big call for John, knowing that it would have made the ambulance crew's journey completely unnecessary.

The value of creating some thinking time cannot be underestimated. Several of the doctors talked about having the opportunity to think through problems on their own:

"I had considered what I was going to do when I was walking back over here" (John Line 125)

"I was thinking of what to do in the drive in" (Anna Line 23)

Cath decided to create time for both herself and the patient because she felt that the decision making was being rushed to the detriment of the patient:

"I explained to him what was going on and asked what he would like us to do. In hindsight it wasn't the best thing to do at the time, he looked at me horrified and said "I don't know what to do". So I said, "We'll give you 10 minutes and we'll come back to you and decide what is best to do" The other doctor was concerned but I said we would come back to it, he needed a break..." (Cath Line 175)

Ben, when faced with his dilemma found it hard to create time, perhaps due to lack of experience:

"I felt very stressed about the situation.... I was newish in the job and it felt like a big deal at the time... And it felt like a big decision...I think I was probably a bit frightened of what to do, panicky I suppose, and wanting to make the right decision but feeling I should be making a decision quickly. The two don't necessarily go together that easily." (Ben Line 170)

One of the characteristics of the cases that were difficult was that there was often a pressure of time to make quick decisions. A key element to dealing with this was to find a way to create space to allow clear thinking or deliberation, rather make a rushed decision feeling stressed. This act of deliberation is important in complex decision

making and supports Eraut's work about what marks out a skilled professional (Eraut 1994). Some of the doctors were able to do this, even if the space they created for themselves was only a matter of minutes. Others felt more pressurised to rush a decision because of the external circumstances, but felt uncertain if the decision was a wise one. Those minutes to themselves to think were of huge importance in thinking about the bigger picture.

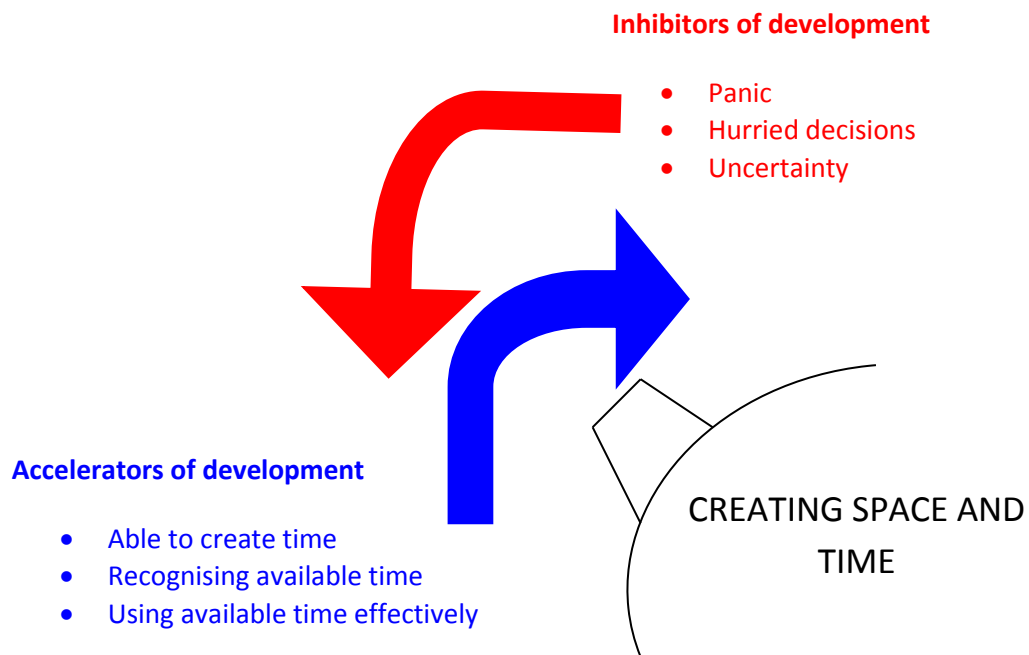


Figure 4.6 Creating space and time

4.6 Higher thinking- developing tools of decision making

While early on in training there was an emphasis on observing and carrying out routine decision making, the importance of observing and carrying out more complex decision making started to become more important, especially among the more senior doctors. The doctors started to face situations where they have had to make decisions which do not strictly follow protocols or guidelines.

This form of decision making could no longer rely on some of the tools used in the routine decision making, characterised by the beginnings of their careers. They needed to switch from simple pattern recognition or following clear protocols to more individualised decision making where there might be more than one correct action, or each of the options presented potential problems. Guidelines alone were not enough- they needed to be able to apply them to the situation. Making the transition depended

on coming up with strategies to help. Cath described developing her own cognitive systems for thinking about managing difficult situations:

“So I try to summarise what is wrong, count the failing organs. If they’re for ITU that doesn’t come into account, but if they are to be managed on the wards I do sort of count the organs that are failing. Because if there’s multi-organ failure they are going to die.... Sort of rationalise your decision, so sort of this, this and this for this reason, that’s the decision. If someone disagrees with you, you can at least say “at this point for these reasons I made that decision.” (Cath Line 440)

This sort of description resonates with Schmidt’s description of “illness scripts” building up cognitive structures based on a wealth of clinically relevant information (Schmidt and Rikers, 2007).

Time as a tool

Some of the doctors recognised that making decisions to not act now, but to use time as a management tool was important:

“In the end, it is also about differentiating what is acute, what is to be done straightaway and when I can use time as a tool.” (Freya Line 247)

“Watchful waiting is commonly used- you have time to see how things progress and discuss things.... When I first started you always feel doing something is better than doing nothing. I suppose if someone’s unwell, you want to feel like you’re doing something and show the patient and colleagues that you are doing something. As I’ve gone on, you get used to dealing a lot more with uncertainty of what’s happening and feeling more confident in my own ability.” (Anna Line 299)

Anna describes the tension of the early years where being seen to do something is perhaps as important as what you do in the eyes of a trainee. The issue of coping with uncertainty and feeling confident that you can live with uncertainty is important.

Anna went on to discuss the impact this shift has on her decision making:

“I find myself saying to patients “I think we should watch and wait, but if this, this or this happens, this is what we should do. I think my decision making is a bit calmer. I realise that decisions don’t have to be made in 2 minutes unless it is an emergency... generally you have more time to think about things. I think that I know more stuff, I’m a bit more aware of the complexities of things. In incorporating all those things, the decision making process can take longer. So I’m just a bit calmer, and take longer when needed.” (Anna Line 314)

Jane recognised too that with greater experience she could see a bigger picture, not just what was immediately in front of her:

“Now I realise in retrospect, the sepsis maybe clouded my vision and I was very much led down the garden path by the fact that she had this rising CRP and she was clammy, but actually she was clammy because she was shutting down...”
(Jane Line 270)

Taking a step back required the doctors to hold their nerve, but allowed for better informed decision making. Dave found himself in a situation where he was asked to see a patient by another team to advise, but found himself in a position where the nursing staff and junior doctors were in conflict with their consultant, and hoped Dave might intervene. Dave tried to navigate a fine line of trying to do what was best without upsetting a colleague. Although he had a clear view, he recognised that there were other competing views in this complex situation, and it made sense to be more diplomatic because of a “bigger picture”.

“One of the considerations I had when I was weighing things up, as well was that if we fully disagree with this Consultant at this stage, and he’s already a bit uneasy about us being involved in their patients, then in terms of detriment to any future patients that may need our input, that was a real consideration as well. That’s part of being in a liaison service.” (Dave Line 93)

Part of Dave’s strategy was to try and find common ground:

“I could see that it might be done to make him feel better, whereas I think he was aiming for it from a curative point of view. So although they had different aims as to why the treatment might be done, it could be favourable for both sides of the coin. On the other hand an anaesthetist would probably not have gone ahead with the procedure so by asking for an anaesthetic opinion, I could be seen to be helpful while building in safeguards.....” (Line 41)

By looking more widely, Dave was able to get the best outcome for the patient but in a way that had wider benefits also.

Safety nets

Apart from discussing more rounded decision making, Anna also raises the important issue of making a decision, but when the situation is not clear-cut having a fall-back position, for the benefit of the patient as Freya describes, and for the doctor as Anna discusses:

“Being able to implement a safety net for these patients and also in terms of making sure that somebody follows up that result and so on.” (Freya Line 245)

“If you’re not sure I always think it’s better to ask someone, you go to bed and not worry about it, as opposed to keeping on thinking about it and wondering if you’ve made the right decision.” (Anna Line 287)

Taking more difficult decisions has more risks for the patients as well as for the doctor, emotional as well as safety. Patient safety nets are frequently talked about by the doctors, but Anna’s point about talking to colleagues, even if just to share a burden rather than for advice, seemed to be equally important.

As the doctors became more experienced, key skills emerged: seeing the “bigger picture”, not feeling they had to rush decisions, allowing or creating time, having more than one option and utilising the resources/ team more effectively. The ability to be aware of and be able to articulate their decision making also emerged. Being able to tolerate ambiguity is also important when there is more than one option is also important and resonates with other work (Hancock *et al*, 2015).

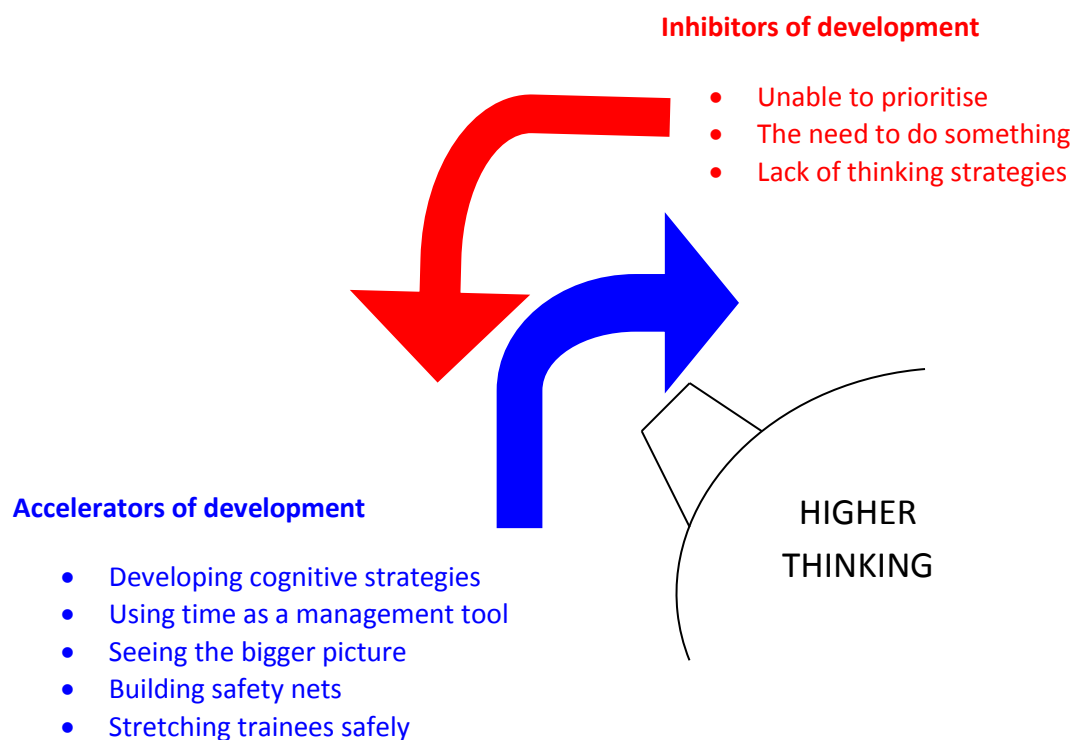


Figure 4.7 Higher thinking

4.7 Meta-awareness- the role of one’s own views on decision making

Initially in training much of the decision making was straightforward. As time went on harder decisions were required. Freya described how building confidence in decision making enabled a shift from cautious decision making, following rules to being able to make wise decisions that required a specific judgement. Not worrying so much about what others were thinking was important in allowing this process to happen:

“Earlier in my training I would have acted in a different way, much more according to guidelines, maybe my own fears, my worries about... making mistakes or making decisions by myself” reflecting on the fact that she might have insisted on admitting a patient to hospital earlier in training.” (Freya Line 231)

Being aware of your own values and how that might impact on decision making also seemed to be important to allow patient-centred decision making in this group of doctors. It is hard to speculate on what happens when doctors are not aware of their own values since it did not emerge in this study, but it is likely to impact on decision making. To make the best decision for the patient required Bob and Cath to be aware of their own feelings and try to put them to one side:

“I think I have changed in the sense that now I try very hard to retrieve the retrievable, which is surprising in the work I do (end of life care). Perhaps a few years ago, I might have said “she’s dying and this is what she’s dying of. Hopefully I’ll come back and settle in the middle, but at this stage I’m on one end of a spectrum, trying hard to correct the correctable. Maybe too over-zealous, because even if you could retrieve them, why are you doing it, so maybe I’ve lost sight a little....Maybe they are not as retrievable as I hope it is. It’s a lot to do with hope- I’m hopeful for them, too optimistic. So it’s swings and roundabouts. In a few years, I might be in the middle.” (Bob Line 226)

“I know myself that if I were that poorly I would want minimal intervention, I have to be very careful that I’m not transferring that on to people. And I think because I’ve got that insight, I am ultra careful that I don’t transfer that onto other people.” (Cath Line 404)

Ben recognised that time and building up experience and the ability to weigh up the situation were important to being able to make some of the decisions he was now making:

“I think I would have wanted a lot more support making those decisions. Possibly it’s because you don’t know enough about management options. But there’s also a judgement thing- I wouldn’t have felt confident enough to have those discussions with a patient without being sure of what I was saying.” (Ben Line 337)

All of these doctors are describing different elements of becoming aware of their own thinking and values, and the impact that has on their own decision making. Thinking about their own impact on the situation, and how that changed with time was important but developed much more in some of the doctors, than in others.

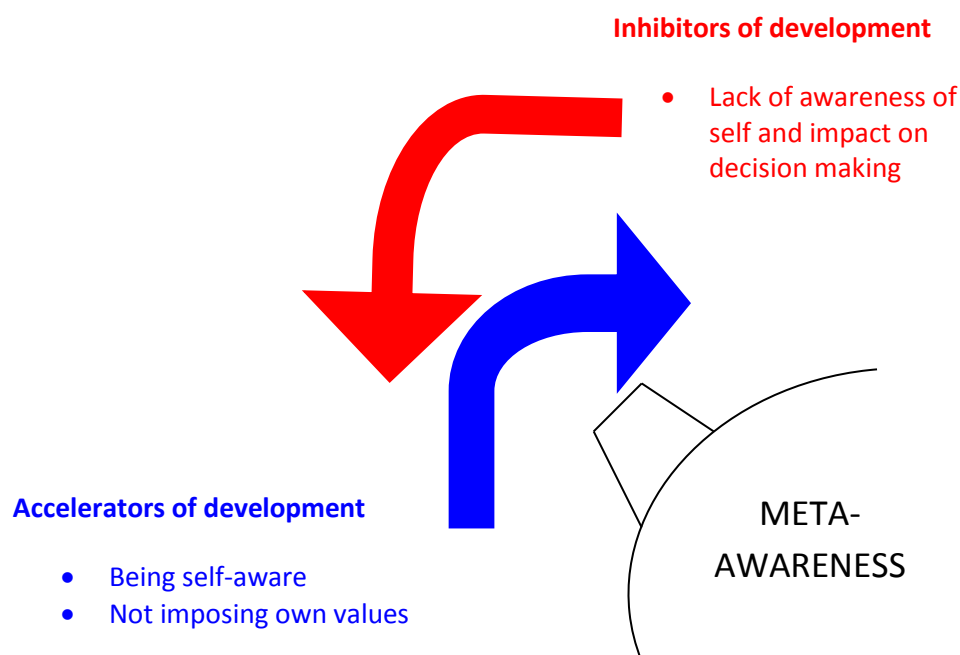


Figure 4.8 Meta-awareness

4.8 Post-script: carrying the burden and achieving closure

The doctors felt acutely the burden of some of the decisions they were making:

“So she might be dying, and then I send her to hospital. And if she dies in hospital, when her preferred place of death is elsewhere, so that was a huge burden on me “I’m sending her in, she might die there, and it will all be my fault if she dies there and not where she wants to be” (Bob Line 62)

For the more junior doctors especially, feeling able to call on a senior colleague and getting an appropriate response was very important:

“It wasn’t completely explicit, I wanted some reassurance. So I phoned the medical reg, I briefly explained the story and kind of told her what my feelings were about it, and I said I would just like some reassurance about it. So she was really nice and said that she’d come down, and review, and we could make, and she said “I’ll pop down and we can decide together” (Jane Line 80)

Jane felt very supported by her senior, and particularly the fact that the doctor was enthusiastic and also willing to use it as a teaching opportunity and get Jane to share her ideas in a supportive way. She also affirmed Jane’s thoughts and plans. The senior input was often supportive; it did not change the plan but helped reassure the doctor. Sometimes the doctors made the situations more difficult than was needed by not asking for senior input in hard decisions:

“Afterwards I did discuss that with one of the registrars and sort of said, “I made that decision in isolation” ...” (Tina Line35)

Freya generally felt comfortable making decisions and would have only discussed a decision if there was likely to be disagreement:

“If I thought my clinical supervisor would have disagreed, I talked to her in the evening. I would have reconsidered my choice but it had been my decision....”
(Freya Line 168)

This perhaps missed the point that in difficult decisions some of the help needed by the training doctors was nothing to do with decision making, but confirmation for the doctor that they were doing the right thing. Part of that discussion with seniors was not because the doctors did not know what to do, but to get affirmation that they were doing the right thing, and to avoid needless worry:

“Sometimes just talking about it, even if they don’t add anything, you are having to verbalise it and think about it and its going through your head again. So I think I could have made the decision without the phone call, but I felt better having made it... The more people who agree with you, the more sort of it feels validated.” (Anna Line 113)

There were a number of factors related to the burden that the doctors carried. Most who sought advice found it. Sometimes the doctors carried a heavier burden because they did not share it when they could have done. Simply sharing the thought process was helpful even when the doctors were confident about what to do.

In some situations, the doctors remained concerned after the decisions had been taken, as to whether they had made the right one. Tina had made a difficult decision to use a medication which might cause harm, because she felt it would help the most in the particular situation:

“She passed away over the weekend. I was obviously a bit concerned about this and wondered did my decision, you know... hasten her death? Or you know, was it kind of. Would it have happened anyway?” (Tina Line 32)

In Bob’s case he did not have to make a decision in the end because the acute problem had resolved, but worried that he would have made the wrong decision:

“I’ve been trying to get my head round it... I felt like I made a very hasty decision. But then was there any other way to make that sort of decision? Because I would have done her a huge disservice I think, if she hadn’t reverted... So on the one hand I’m relieved it didn’t happen that way, but on the other hand, I’m a bit worried that if it had happened the way I set out to do it, I would have done her a disservice at that time. But I can’t figure my way out of that.” (Bob Line 175)

Tom got some resolution from speaking to the patient's relative after the patient had died. That helped to rationalise the decision she had taken:

"But her son did actually contact the practice after she died... he was quite grateful and felt better about the fact that he'd thought she'd actually got quite good care in hospital and had explained everything... Even with the treatment in hospital she didn't survive but we couldn't have made that call to start with... so I felt ok about it. (Tom Line 113)

Ben too found that when he admitted a patient acutely to try and reverse a situation, when the patient might have preferred a different plan of action, that the family were very supportive after the decision:

"I met his wife afterwards.... And she was lovely, and said he was really comfortable, and there was always going to be something that precipitated the end... And she thanked me for everything that I did. It didn't appear like it crossed her mind that it was the wrong thing to do." (Ben Line 236)

Freya, on the other hand would have liked to speak to the patient's family after a fairly traumatic end to the patient's life:

"My GP trainer tried to phone her son but he was never available, he never called back, and he was apparently quite upset about what happened. I never got hold of him, which I somehow regret it a bit as well I think." (Freya Line 135)

It was important to find out what had happened after a decision had been made:

"I went to try to find him- I try to do that if I've got interesting people. I'll try and find out what's happened to them and see whether my original diagnosis was correct or not. And I went to see him a couple of days later and they had continued the treatment for a couple of days but then had stopped it..... I think I would have come to the same decision again." (Kate Line 140)

Cath did not have a chance to check up on her patient afterwards, but wished that she had been more assertive and insisted on the registrar seeing and assessing the patient, rather than giving advice over the telephone:

"I just, I feel like... I should have been a little bit more, I should have challenged the registrar a bit more, or at least said, "if you're going to make that decision come up and see him. And make that decision." Because maybe if he'd seen the patient, seen how unwell he looked, that might have changed things." (Cath Line 237)

On a few occasions, what had at first seemed like a life or death situation settled, giving the doctors the chance to review the decision making before the situation arose again:

"Half an hour later she reverts....So then I had to explore with the daughter and patient, what would happen? How would they like us to react should this happen

again? We'd never discussed that before. And I think I sort of looked back and I think we should have broached these: "what are your wishes should you change? Would you like us to manage it as best as we can here?" (Bob Line 79)

In the interviews it was clear that many of the doctors gained something from being able to talk through the cases. They were able to gain comfort from discussing with peers, seniors, patients and families but it seemed that more often life had moved on to the next situation before the previous one had been entirely resolved. There are dangers to that. This section has already looked at resilience, but resilience gets undermined by repeated unresolved emotional traumas.

“Defusing” as a process refers to an intervention designed to “make incidents less harmful, decrease tension, and help individuals to regain control” (Wright, 1992). It is too defined a process to apply in this context, but the doctors who successfully moved on and developed from difficult situations were able to defuse to an extent. Tolerance of ambiguity has been considered earlier, but a lack of tolerance also impacts on the doctors’ ability to move on without leading to burnout (Cooke, Doust and Steele, 2013) or becoming increasingly dogmatic or rigid in their decision making (Furnham and Ribchester, 1995).

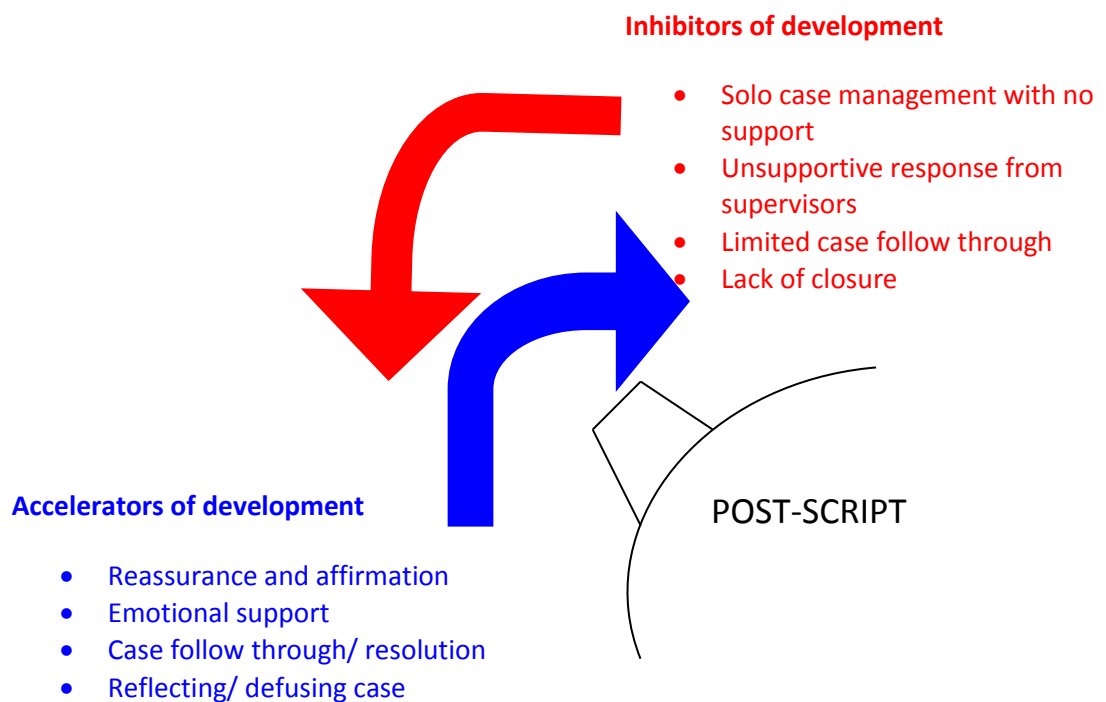


Figure 4.9 Post-script

4.9 Summary

The internal interactions are a major category that have been broken down into smaller identifiable components. The danger in doing this is that they are all interwoven and dynamic. The model being developed is trying to articulate the idea that for the training doctor, their ability to look internally and overcome inhibition, develop key skills and show self-awareness, determined how successful they were at progressing their skills. In each area, there were a number of accelerators and inhibitors- at any one time the balance of these will shift in the direction of accelerating development or inhibiting progress. Because the model is fluid, the weight of importance given to any one area completely depends on individual circumstances. It is entirely possible that one significant component, for example a strong degree of resilience, could more than compensate for a number of other negative aspects.

Chapter 5. Data 3: External influences: Interaction with the clinical setting

Having considered the internal influences, this chapter describes the interaction taking place between the doctor and the clinical setting. The common theme to this section is the interaction of the doctor with the teams they work within and their ability to get most out of each situation. The interactions with people can occur formally or informally and potentially as much with people unknown to the individual as well as those known. It is about the ability to form the interaction and use it to aid learning.

Those doctors who were able to do that more effectively accelerated their development. The opposite was also true, those who struggled with the interactions (sometimes because of their own skills but often because of the role of others) found their training inhibited. This chapter looks at key aspects of the clinical environment that the individual doctors encountered and needed to interact with:

- The nature of supervision
- Creating a learning environment
- Controlled freedom: supervisors letting go
- Clinical conversations: case discussion and the role of assessment
- Feedback
- Role models

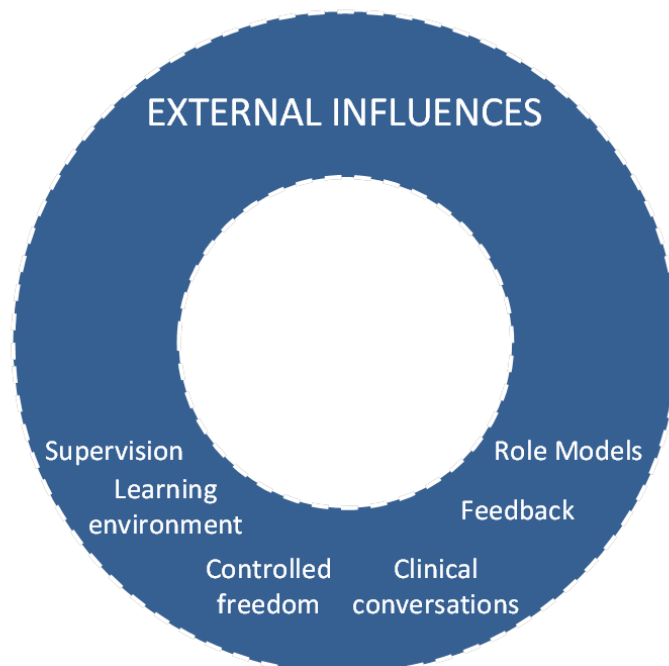


Figure 5.1 External influences

I have described each of these components separately, but there is some overlap between them. As with the rest of the model they are dynamic and interact with each other. They assume different importance for each doctor and in particular circumstances. In each case good experiences could accelerate development. Poor experiences could hold back or even worsen skills.

5.1 The nature of supervision

Throughout the interviews, the quality of clinical supervision was a very important component of the training doctors' learning experience. Crucial to this was being able to access their supervisor when needed, having access to the supervisor's attention and feeling supported.

Accessibility of high quality supervision

Accessibility to their clinical supervisor was important, especially early on, in developing, and particularly carrying out more decision making but this relationship needed to evolve. In the initial stages access needed to be immediate, but gradually evolved to become more removed allowing greater independence. John described the value of having immediate access to verify that what he was doing was correct:

“A&E is a very supervised environment- in a way I like that because you can always bounce things off people if you're not sure..... My experience was that Consultants are quite hands on (in A&E), if you were unsure they're very happy to review the patient, and usually very happy for you to continue what you're doing” (John Line 231)

This picks out some key elements to the initial supervision- timely and affirmative. A common thread throughout the study was that in most cases, when a training doctor discussed a case with their clinical supervisor, they usually had a reasonable idea as to what should be done and were looking for affirmation of their decision, rather than complete guidance. John also went on to describe the evolving access, where the feedback required need not happen straightaway as long as it did happen, but that there remained occasions when immediate access was needed:

“Support comes in a variety of ways- it could be knowing that the Consultant was going to review the patients some point in the week. That might be enough. As long as the decisions that you've made have been looked at, you'll be taught about whether they were appropriate or not. But I also think you need a level of support where if you're floundering...that you have somebody immediately that you can bounce ideas off, or ask to review a patient”. (John Line 253)

Tom also learned that you could get support from more remote supervision and that might help in building confidence in making decisions through being more independent, rather than having immediate help:

“You are on your own, you want to make sure that you are making the same decision that somebody with more experience would do.....I probably learned more from dealing with the situation, and I did have the support of talking to people, even though they weren't actually there. I think that helps and you learn from that ... managing it independently.” (Tom Line 142)

This was a theme that comes up in other sections. For the trainee to develop practical wisdom, the trainee/ supervisor relationship has to evolve from trainee/supervisor to colleague/ colleague and that required the trainee to take responsibility and earn trust; as well as the supervisor learning to trust and devolve responsibility. Kennedy, Lingard and Regehr (2007) described 3 levels of clinical supervisor activity: routine oversight (ward rounds, handovers), responsive oversight (more hands on either in response to a patient or trainee issue), direct patient care (taking over from trainee) and backstage oversight (activities which the trainee is unaware of eg checking notes or discussing with other team members). In this situation, the routine oversight and direct patient care had straightforward boundaries. The balance of the “responsive oversight” was important because it was often not patient issues that led to this sort of supervision. More frequently it was about the trainee and supervisor and their respective confidences in the trainee and for the supervisor to let go. If this shifted too far either way, the trainee was unsupervised and not learning or the supervisor was stifling decisions. The latter may have been effective patient management but it was not good for doctor development.

Alongside the physical access to a supervisor, the attitude and behaviour they encountered from supervisors was important. There were many examples of the training doctors feeling well supervised, important factors were being listened to and getting some positive response:

“I think if you feel like someone's listening and got the full picture. Hasn't kind of drifted off when you're talking.” (Ellen Line 398)

“There are jobs where you get positive feedback. I think that probably depends less on the job, more on the personalities of the people you work with. Largely I think you don't hear, but it's quite nice to have some positive feedback.” (Ben Line 378)

Both of them pick up on the personalities and attitudes of the supervisor- this was very much individual specific, and not related to particular specialties. Jane, a relatively junior doctor talked about the value of being encouraged by her supervisor to discuss a case, just by the use of simple facilitatory phrases or by offering to get involved:

“Someone who’s always like “yeah, yeah, tell me about them” or like this doctor that I work with who said, it was the instant she said, “Oh I’ll pop down and we’ll see her together and we’ll just decide” that was brilliant because she seemed interested.” (Jane Line 337)

As well as the availability that the second phrase conveyed, there was also a message of helping the training doctor to reach a decision in partnership, rather than taking over the care. Simple communication techniques which health professionals are trained to use with patients, seemed equally valid with trainees. Jane contrasted the experience described above with other negative situations where the trainer simply did not listen to the full picture:

“Occasionally I’ve spoken to a senior and I’ve started to sort of present the patient over the phone and then they’ve gone “well, obviously this is wrong” and I say “Well yes, but I’ve ruled this out because...” That really annoys me, because they kind of jump to conclusions...I think it’s important that they listen properly to what you’re saying. Listen to all the bits that you’ve done.” (Jane Line 315)

Language and the nuances/ meanings that go with it are important, and other sections also address the significance of trainees developing the language to package their clinical scenario effectively. The trainee needs to feel their narrative is listened to before a supervisor jumps in with advice.

Crucial to these early experiences of decision making was the added value that senior doctors/ healthcare professionals could bring to that process. Instead of building up these skills by trial and error, the doctors were able to observe how others made decisions and learn from them (observational learning). Additionally, where supervisors were able to explain their thought processes, not just demonstrate them, decision making could be even better because it was backed up by understanding:

“You learn from how other people handle situations- I think that’s where I’ve drawn a lot of my current decision making, kind of skills that I learn from other people and finding what other people find acceptable. How they kind of process things when they’re having to come to those decisions. And then gradually as you get more experience and get exposed to more things, you go well, I’ve been in the situation before, I did that then....” (Kate Line 174)

“....And from seniors adding things and explaining why something might be done differently. There’s one doctor who always makes a big effort to explain why something’s the case, or why we’re going to do something... Applying understanding is much better than just doing what you’ve done before.” (Jane Line 438)

Discussion and questioning by both trainers and trainees accelerated progress much more than closing off discussions even where the management decisions by the trainee may have been correct.

Poor quality supervision- apathy and discouragement

Most of the trainees spoke about situations where their requests for help or expectation of teaching /feedback were met with disinterest. They described the damage that that could do.

Cath and Kate described extreme situations:

“The Consultants were disinterested. Completely. And they turned up in the mornings and saw patients and wandered off, and were very uncontactable in between. They had their mobiles switched off, they didn’t answer their pagers etc. So you had to make the decisions but you don’t get feedback on the decisions that you’ve made.... I don’t think they ever knew my name.” (Cath Line 337)

“I tried to speak to the registrar, to try to get their take on it. But he wasn’t available. It was a medical registrar who was never available, so that was another issue.... I tried 3 times to contact him and there was no answer.... Typically he would be uncontactable for a while. It was also he went to bed and didn’t answer his bleep, and then he would reappear at about 5 or 6 in the morning when you’ve got a couple of hours left” (Kate Line 36)

For Cath and Kate, it was difficult to get hold of someone, but even when they did, it was of little help. Kate described a similar experience where she did not get any response from her supervisor that was helpful and in the end just gave up asking:

“There are some who you know I’m not even going to ask. Because you know you’re not going to get anything, you try hard and don’t get anything back.” (Kate Line 223)

John described an opposite experience where his trainer was both interested and proactive, and although initially it was disconcerting, it proved to be very valuable:

“In a later practice they were much more proactive, and actually looking in on my consultations, I felt quite uncomfortable because I thought...”Do they not trust me?” When you get your head around the fact they do it for everybody, having that person saying “I’ve taken 10 minutes out of my day, I’ve read

through your consultations and I want to try and pass learning, teaching to you” that is quite a productive way of doing it.” (John Line 312)

The problem for Kate and Cath was that they had to manage the patients on their own, leading to them either making decisions with no supervisor feedback about whether the correct decisions were made, or avoiding making decisions. Both paths reduced their decision making.

The training doctors’ experiences of being rejected in their attempts to get supervisor input impacted on their future encounters:

“Being nice, I don’t think there’s any reason why anybody needs to be obstructive on the phone. When it’s your team, and your hospital, and you’re all looking after the same patients, then I don’t think there’s any reason to be grumpy, you know obstructive. Sometimes I’ve been on with a doctor that I’ve worked with before and I’ve thought “Oh no!”” (Jane Line 327)

A particularly challenging situation described was by Tina. Apathy and indifference were regularly described, but ridicule was a step further. Part of learning is to expose your knowledge, in order to add to it, but that needs to be done in a “safe” way. In this situation, Tina describes a very powerful story of another colleague’s confidence in decision making being destroyed because of the inappropriate behaviour of his supervisor:

“I’ve seen when people ask for advice and then get ridiculed for asking, and if that keeps happening, it knocks away at your confidence and then you don’t make any decisions. There was a doctor I worked with, and when I worked with him he seemed to make good decisions, he always led me well. But senior doctors and other team members kept chipping away at his confidence and he said now that he never makes any decisions, always rings the Consultant.” (Tina Line 263)

The importance of this supervision cannot be overstated, moderated by the trainee’s interaction with it. At its best, the supervision was timely, encouraging and stretched the doctors (covered further in the next section). Unfortunately there were a large number of situations where the opposite was true, ranging from apathy to ridicule. Stewart (2008) showed in her work with junior doctors that the anticipated response from their supervisor had a major impact on their willingness to engage with their seniors. Even if a one- off episode, this could change completely the behaviour of the training doctor in terms of their decision making, ability/ willingness to discuss cases; and emphasised again the importance of both good supervision but continuous role modelling by the supervisor. Although this group of doctors went through a variety of

training experiences, the one aspect of supervision that they could not gain anything from was lack of engagement. Some other negative experiences could in due course become part of their learning. The accelerators and inhibitors in relation to supervision are summarised below:

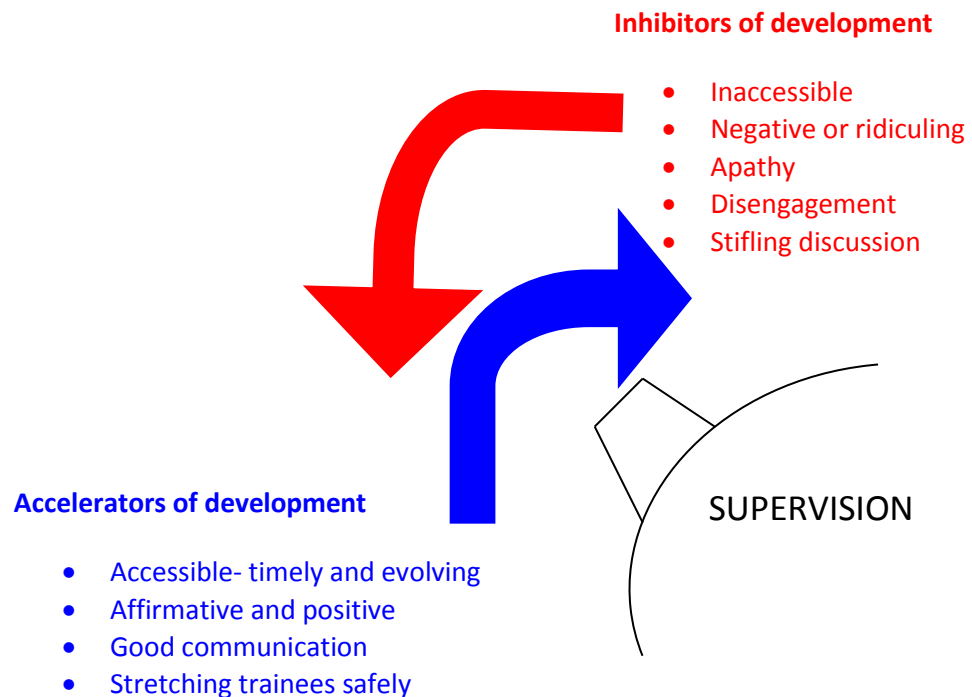


Figure 5.2 Supervision

5.2 Creating a learning environment- openness to discussion and safety to take emotional risks

While supervision tended to be on a one to one basis, the team environment that the doctors worked in was also an important influence on their development. In their work on communities of practice, Lave and Wenger highlighted the “community” as being a crucial component of professional development alongside the shared purpose and the practitioners involved (Lave and Wenger, 1998). Alongside formal education, the communities of learning aptly encompass some of the aspects of informal learning that is central to medical education and particularly the transfer of tacit knowledge about how the community works. If the team or “community of practice” that the doctors rotated into was weak or had poor relationships in it, development was stifled. Conversely joining a strong team with a good social fabric and committed to formative learning, questioning and improvement gave training doctors an advantage. The next section draws out some of the key elements of the environment.

The training doctors described some excellent training experiences. Sometimes this was because of the individual personality of the supervisor:

“I think it’s personality dependent- there are some people who really have a passion for teaching as well and who look to explain things, and always have a teaching ward round and that helps a lot, and you feel much more comfortable asking questions.” (Kate Line 220)

Being interested in teaching, offering explanations and encouraging questions were key traits. They allowed the training doctors to settle in quickly, feel accepted and able to ask questions. Kate described the importance of explanations being given around decision making in order to process the reasons and issues being considered:

“I think it depends a lot on the individual personality, and there’s lots of people who will just make decisions and not explain why. You just sit there and think “Why are they doing that?”” (Kate Line 202)

Without this explanation it is hard to understand the thinking needed for complex decision making. An issue though is that some supervisors may not recognise their own thinking processes or be able to articulate them to others. Creating a working clinical environment where training doctors feel safe to contribute, put their ideas forward and take part in decision making helped to develop decision making skills further. Freya described the importance of working in a supportive environment and the liberating effect that had:

“When I was a student there was a very strict hierarchy... I never had the chance to discuss things. Now I feel to be able to discuss things in a very supportive environment, that is not judgemental and supportive if you make mistakes is very useful.” (Freya Line 276)

To feel safe to take risks was important in stretching their decision making skills, but plainly for senior clinicians they had to balance that with clinical risk. Jane and Cath described more fully a clinical decision making environment that helped them to develop:

“Having Consultants who are obviously happy to have discussions and involve their juniors, and even teams where you feel you can in a polite way kind of challenge your seniors. Here, it’s quite acceptable to play devil’s advocate and have a good, not argument, lively discussion about what’s best. That’s really good because it kind of stimulates thought and discussion... So I think it’s always good to have an environment where you can discuss things openly and challenge people... and ultimately know who is responsible for the decision making.” (Jane Line 360)

“We used to have regular team meetings, everyday everyone would sit and chat about the patients, and I think everyone in that team had their own specialist

input, but their input was equally valued.... There was much more dialogue on the team... The Consultants were very good at making decisions and explaining.” (Cath Line 328)

Jane and Cath described positive team environments in which they worked. They were also describing approaches to decision making which overtly discuss options and the thinking behind them, and the modelling of that decision making process by their supervisor. The supervisor, as well as educational skills, needed to be good at decision making and articulating those decisions. From a training perspective, part of good decision making was having a rationale for making decisions and explaining that rationale. The leadership of teams needed to have enough self-confidence to allow debate, questioning and discussion without the teams losing purpose or direction. Ben described the frustration of having to work with idiosyncratic decision making and the challenge that poses to the learning process:

“Sometimes some Consultants just prefer a particular medication- it’s not consistent with others and it’s clearly not a national rule. It’s just a personal preference, and you have to do it, but you don’t fully understand the reason behind it.” (Ben Line 472)

A more serious problem emerged in developing decision making skills where the training doctor did not trust their supervisor’s judgement. Jane described a case where she felt powerless to intervene in what she felt was incorrect management:

“A couple of times I really sort of disagreed with what the consultant said but I didn’t feel like it was an environment where I could really voice my opinion...The lady was really fed up with having investigations all the time but no one had bothered to ask her. I didn’t feel happy doing the scan, and I didn’t even feel happy doing a neurological examination because she was so weak and in pain.” (Jane Line 379)

Cath had a more direct problem when she sought advice and disagreed with the advice she was given:

“I had spoken to the family, and we all felt at that stage we should have withdrawn treatment so I phoned up the reg. He said “Oh well, we’ll just go for full active treatment.” I said “I don’t think that’s a good idea”. He said “Well, that’s my decision.” That really angered me, because the reg had not seen him. It was just advice over the telephone, and I felt I couldn’t go against that advice” (Cath Line 203)

She did all she could to manage the patient in the way she thought was best without directly challenging the senior doctor. She also spoke to the family to enable them to refuse treatment if they felt they wanted to.

Dave described a situation where he worked in a team where another junior doctor, senior to him, did not make good decisions. He managed the situation by ignoring the team hierarchy, in order to protect his own reputation and safeguard patient care:

“The other doctor, I don’t think I trusted his judgement as much. I found that very difficult. In some ways it was helpful because I didn’t ask for his opinion on things... because I didn’t want their judgement to be reflected in my management plan, and for by association, that to be mine. I suppose I take a lot of ownership of what I decide to do- I didn’t want that to be affected.” (Dave Line 302)

There may be wider issues about whether that was the best way of addressing deficiencies in the more senior doctor’s performance, but that strategy allowed Dave to feel confident patients were being managed well until his clinical supervisor saw the patient. Ellen’s concerns were even stronger, questioning the motivation behind the decision making:

“Doctors were making decisions that I didn’t agree with because the motivation behind making the decisions was dodgy.... They were paid per patient interaction and therefore it’s more financially viable to keep a patient in for longer, to see them more often, to subject them to tests that you could argue they may not need because that is more financially viable.... You don’t know whether people are making decisions because it’s clinically right. So it becomes confusing and you don’t want to be learning from these people because you don’t want to get into bad habits.” (Ellen Line 415)

For Jane, Dave and Ellen, their responses to the situation differed from feeling powerless, working in isolation or trying to avoid absorbing bad habits. All were difficult, somewhat dysfunctional situations, impacting significantly on development because the decision making started to be more tactical, did not receive feedback or lost some of the governance structures. In those teams with good leadership and committed to development, decision making skills could flourish. Reid (2015) describes the role trainers have in developing expertise in translating the curriculum to emerging practice needs, advocating on behalf of learners and brokering relationships in accessing specialist knowledge and support. In my study, dynamic supervisors were able to make the clinical environment accessible and help the training doctors to navigate successfully through it.

It was clear from the junior doctors that some supervisors were able to create the right atmosphere to discuss decision making. While some of the negative experiences were

painful, the doctors were also very clear that that was not how they wanted to be. Although they did not say it, questioning what was going on may have been another learning step. The accelerators and inhibitors present within the learning environment are summarised below:

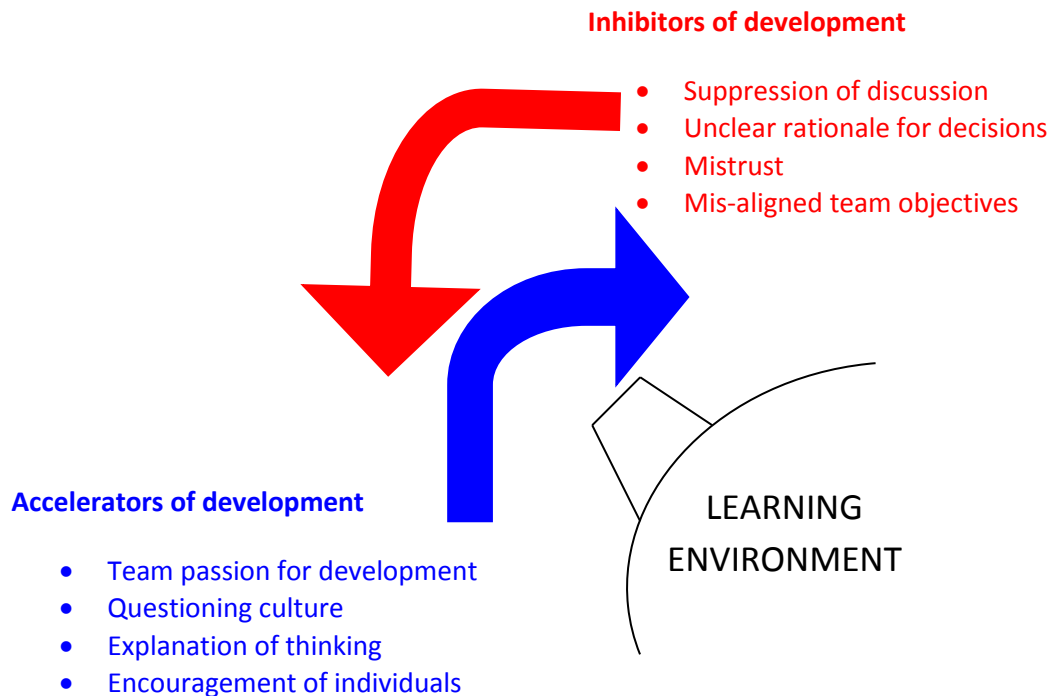


Figure 5.3 Learning environment

5.3 Controlled freedom: supervisors letting go- allowing training doctors to make decisions, stretching their skills

For a senior doctor the role in clinically supervising a doctor needed to vary according to the individual, allowing more independence of decision making in a structured way. This was crucial but required considerable skill by the trainer to judge when and how to allow this progression, balancing the needs of the training doctor, the patient and the trainer’s own willingness to balance risks.

John describes his confidence building as he was given greater freedom having proved his ability along the way:

“The reason I look back on my A&E experience so positively was because the feedback I got was positive- the reason I felt it was positive was because I was given more and more independence.... Being allowed off the leash to make my own clinical decisions... I guess that was a gradual process.” (John Line 355)

The need for supervision changed from an immediate need for a patient to be seen to a need for advice or remote supervision. Dave described what others articulated, a shift in what they were asking for when they sought advice- affirmation/ adjustment of their plan rather than a plan from scratch which might have happened earlier in their training:

“I would hope that there were very few times where I phoned up and said “I don’t know what to do.” It was more a case of “Right I want to do this but just need to check with you that that’s ok, I’m not missing anything. Is there anything else I should be thinking about?”” (Dave Line 241)

John described his positive experiences of having support, but only when he needed it:

“Although you are supported, you’re supported by a GP trainer who is in a different room to you. And you have your own patient case load. And you’re making your own decisions. In my latter post, it would be very rare that I would have to actually disturb another GP to get their opinion...immediately” (John Line 271)

This seemed to be a hard role for a senior doctor to manage sensitively- from being very hands on to “light touch” supervision, balancing both their judgement of the trainee and how much they could cope with, as well as the clinical need versus the training need and trying to align those goals. Tina described her experience in general practice but it mirrored some of the hospital experiences, albeit in a less explicit way:

“In general practice the experience I’ve had is that you start really quite slowly so you’ll have started seeing people and it would be discussed with almost every patient and them seen by the GP before the patient left..... And then it would be that at the end of the surgery you’d go through the patients. As you progressed, you’d see that the trainer is happy with your plans more and more, and happy that your decision making is safe. That gives you confidence to be more independent.” (Tina Line 212)

The process was two way- both trainer and training doctor needed to gain confidence- the trainee in themselves and their ability to be more independent, the trainer believing more in the trainee. The third element was about the trainer/ supervisor gaining more confidence in themselves that they can safely let go, with some safety nets. It was beyond the scope of this study to look in more depth at the role of supervising doctors- it might be imagined that the experience of the supervisor may be important in this, although personality traits around caution and risk will also be important. At some stage, training doctors also became supervisors to other doctors and Ben described his own approach to supervising, trying to avoid some of the problem of imposing his own views on patient management:

“When juniors come to discuss a decision they’ve made, it sometimes isn’t what I would do, but if it’s safe I generally try and make them explain why they decided that...But I generally don’t change their decisions, because I think it’s important that people make decisions and that they feel comfortable making decisions. And as long as they know why they’re doing it, and it’s safe and appropriate.....” (Ben Line 431)

In complex decision making, there are often several ways to manage a problem. Part of developing the skills of training doctors was for the supervisor to allow some freedom of decision making, exploring the reasons for decision making, but only changing decisions where necessary. Changing decisions for no clear reason undermined decision making development. Ben described the impact of this:

“If someone changes your decision constantly it can be quite disheartening and probably pushes you towards thinking “Well there’s no point me deciding anything if it’s going to be changed anyway...It’s important to know why people change their decisions, because I think it’s important that people say why they have decided something and the rationale and other options.” (Ben Line 444)

The challenge for a supervisor was balancing being clinically responsible for the patient while avoiding being so hands on that decision making was stifled:

“GPs will often read through notes of trainees, but they can only go off what you’ve written and if you’ve missed the point they have nothing else to go off. There was a case where a trainee missed spinal cord compression, but because they hadn’t even thought about it, there was nothing in the notes to suggest it or raise alarm bells for the trainer. So there’s always a risk because if they’re not actually seeing the patient, it is entirely reliant on your assessment.” (Tina Line 335)

Many had strong views on the negative impact of over-supervision and the fact that this stopped them from developing their own decision making skills:

“The worry is when decision making is taken out of your hands when someone senior has become too involved, and takes control of the smaller decisions. And so you find that you’re giving all the decision making processes to more senior people, when in fact, I should be doing a lot of the stuff myself really. In my last job...one of the Consultants was present quite a lot and enjoyed making those decisions but ... to the detriment of my decision making.” (Anna Line 249)

Anna went on to talk about the implications of seniors micro-managing clinical cases:

“If you know that someone’s going to come back, you think why bother changing it now if they’re going to change it. Why don’t I just ask them when they come in half an hour? So even smaller decisions become relatively big decisions.” (Anna Line 258)

The balance between a senior being responsible for the patient outcome and being responsible for the training of the individual doctor was not always an easy one to strike. “Constructive friction” is the notion that when an appropriate space is created between teacher support and learner ability, the impetus for self-directed learning occurs (Vermunt and Verloop, 1999) - creating the appropriate space was difficult. However, it clearly had serious implications to developments if the effect was to cause training doctors not to make even initial decisions. Tina described her own response to a similar situation to Anna:

“I did some jobs where the Consultant was constantly around the room, and it’s very easy not to make a decision because you know somebody else is going to come along and make the decision.” (Tina Line 200)

In these situations, self-motivation may be a key factor in the trainee to continue to force themselves to make decisions, even if they are virtual ones, and the senior doctor continues to make the real ones. Ellen picked up on the challenges of training, especially when it got busy:

“Senior colleagues have a big part to play, sometimes you need to be pushed to make decisions. Sometimes when it’s busy you get told “well do this, this and this” and that’s not very helpful. It’s good if a senior says to you “well what are you going to do? Imagine I’m not here, what are you going to do?” (Ellen Line 362)

Some trainers were able to balance the clinical need for senior clinical management with meeting training needs by being present during the assessment but taking a back seat. Dave described the benefits of leading a ward round with the Consultant observing. That was felt to be more powerful than simply discussing cases:

“I’m always very aware that when you discuss a case with somebody, then I very much colour it how I want it to go, so that you end up framing it in a way that affects the outcome, but if they see the interaction, then maybe they’d do things slightly differently.” (Dave Line 286)

Kate described the same model:

“The junior members of staff would see the patient with the Consultant present, to get her point of view, discuss our thought processes as well so I felt that was most useful...It’s quite intimidating and quite daunting kind of leading the Consultant ward round, with the Consultant watching you, but it’s a very valuable experience.” (Kate Line 233)

The combination of a safe environment, but an environment that stretched the training doctor and puts pressure on them seemed to be important. Carrying out patient

assessments with their supervisor seemed an ideal way of stretching the trainee, while allowing the supervisor to manage the clinical risk.

The trainees had described the importance in another section of forcing themselves to stretch their thinking skills, but here the supervisors did it for them, with powerful consequences. Kate emphasised the importance of being stretched, but that it could be done effectively by the trainer asking simple questions:

“You need them asking you questions to challenge you I think. You know “why do you want this chest x-ray? What’s the rationale for ...?” Not criticising, in a very low key kind of manner just asking a question.” (Kate Line 250)

The importance of language from the supervisor was paramount. Kate went on to describe how a supervisor could effectively use language to change the way the training doctor managed a problem without undermining them, or to stretch their thinking further:

“You can say, “well I can see why you would do that but have you thought about this...” “Let’s have a think, and maybe stretch you to think about maybe what we could do instead.” (Kate Line 266)

Simple techniques seemed to work in encouraging trainee decision making in a safe way. Sometimes time pressures got in the way of this, but the best supervisors were able to keep the trainees on their toes, stretching their thinking but in a way that did not leave them floundering. This very much fitted with Vygotsky’s concept of the “zone of proximal development” where the best learning takes place where learners are stretched and challenged just beyond the level they can work independently at (Vygotsky, 1978). The conversation between trainer and trainee is a fundamental part of this process. Both required key skills to enable it to work well.

Tina summed up the balance a supervisor must strike:

“The more hands off they are, it sort of forces you to make a decision, but you’re not learning, whereas you could be making wrong decisions. It’s about finding the balance to give someone the freedom to make decisions in a safe way that they feel comfortable with, and being there. But not being there so much that they never have to make a decision.” (Tina Line 318)

For trainee development, the trainers needed to be initially “hand-on”, still encouraging thinking and discussion, but gradually withdrawing. Remaining “hands-on” allowed

trainees to avoid decision making, or stopped those who wanted to. The positive and negative drivers of development in this area are set out below:

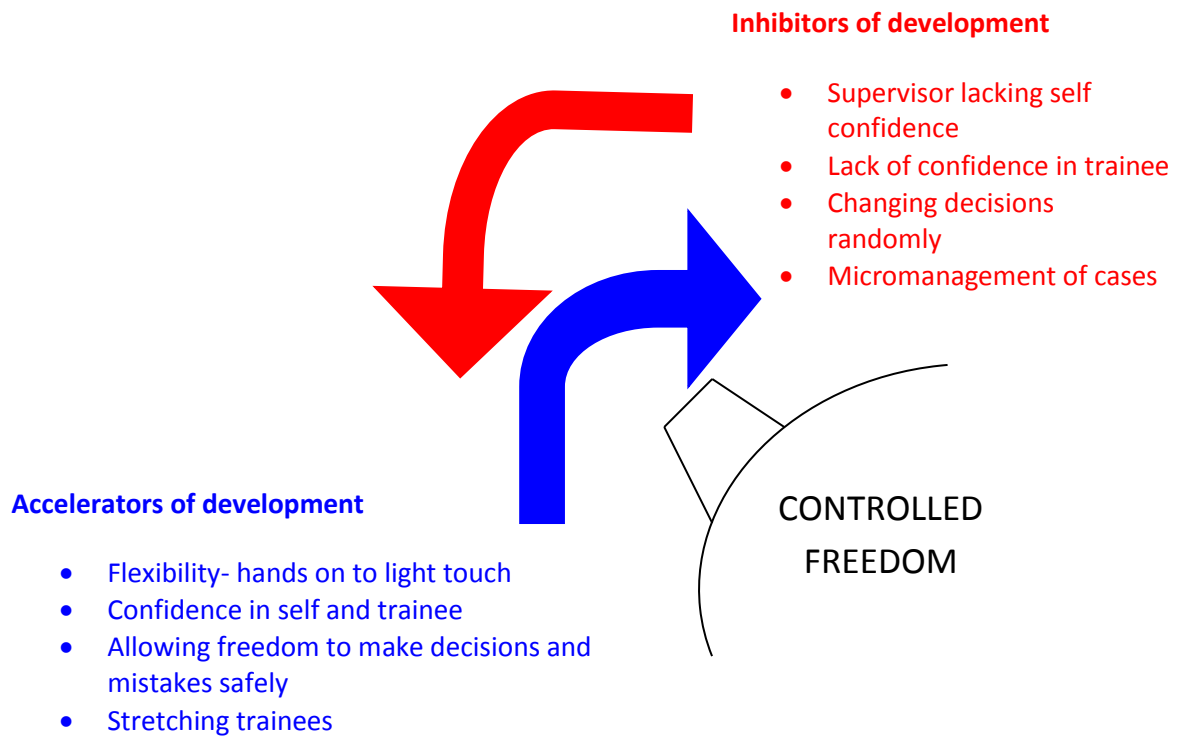


Figure 5.4 Controlled freedom

5.4 Clinical conversations- case discussion and the role of assessment

Case discussion was a key element to working through decision making. Another section covers the importance of trainees developing the language to discuss cases. Informal discussion or clinical conversations took place every day, and was fundamental for honing decisions as Ellen describes:

“I think discussing it is always helpful. Especially in grey areas or kind of ethical dilemmas it’s always useful to get other people’s opinions. Not always just doctors, but the nursing staff and anyone you’ve got available to you.”
 (Ellen Line 379)

Anna described the benefit, not just in decision making terms or from a learning point of view, but also as an opportunity to vent any difficulties:

“Being able to talk about a decision whether that be informally or some form of debrief after the event, sometimes you have to do it for your sanity... Sometimes just talking about it after with your colleagues can help and see if you might have done anything differently, having the opportunity to validate your thinking process.” (Anna Line 326)

For most of the doctors, the informal discussion could take place with peers, nursing staff or senior doctors. There were two ways in which the informal discussion could move into a more structured situation, either formative case discussion or using an assessment tool such as a case-based discussion. Anna talked about the importance for her of adding more structure to discussions:

“An informal chat can be helpful but you probably don’t look in too much depth, but sometimes you want a bit more. And I think where I’ve found it most useful have been when I’ve been doing some sort of assessment or have taken it very seriously- where I’ve wanted to be more critical of myself and more worried that I did the right thing. That’s been far more beneficial... one to one... the kind of thing when you don’t feel you have to put a face on or whatever in front of other people” (Anna Line 336)

Part of working in medical teams is theatrical as Anna pointed out, giving the appearance of confidence in your decision making, both to patients and colleagues. Being able to show vulnerability was important to learn. Case based discussions were designed to bring out discussions which would help improve decision making skills. Ben talked about his own experiences of assessment tools, and described shortcomings particularly of using summative assessment as a means of developing people:

“All the people are supposedly assessing you all the time, but it very much depends on who is assessing you. I think someone who knew you giving you feedback every so often would work. We should be doing that with case based discussions but I think we sometimes do those because we have to. It doesn’t help clinically as much as it could... Occasionally it’s done as an educational tool but mainly it has been done to tick assessment boxes.” (Ben Line 387)

For all of the doctors, while they were able to critically analyse cases themselves, the main value of a case review was to do it with someone else as Bob describes:

“Talking through cases helps, or reflective practice can be useful but if you’re doing it on your own, I think you might get stuck in your own little spiral....If you do it with someone else, they might prompt you to think along different lines.” (Bob Line 290)

Bob went on to discuss types of case discussion. Both he and Kate felt the key to successful discussion was the person it took place with- it seemed less about who it was, more about the qualities they possessed and how in tune they were with the trainee’s needs:

“I’ve had informal discussions with people, and I’ve had very formal discussions based on a case-based discussion or reflective practice and both have been very helpful. Providing the person I’m talking to knows that I’m trying to learn from this.” (Bob Line 388)

“reviewing the surgeries as well I’ve found quite useful, so we’ll go through each of the patients, sometimes picking them at random, sometimes going through the whole surgery and just say “Ok, what’s your rationale for doing that? Have you thought about...?”” (Kate Line 280)

Case discussion is an important part of training, and for decision making it provides the language to articulate the thinking and reasoning behind decision making, as well as being able to discuss decisions. The role of assessment was crucial. In summative assessment, the doctors had to worry about their marks and so could be tempted to discuss easy cases to secure high marks but without gaining educational benefit. Formative assessment ought to be the ideal environment but the danger of it was that it could be too informal or too relaxed to actually learn something. Both formative and summative assessment played an important role, but the way it was done was significant. If the assessment became simply a hurdle to get through or purely summative without a clear developmental purpose, then the doctors were less likely to expose their thinking to scrutiny and go for safer cases which secured a good assessment mark.

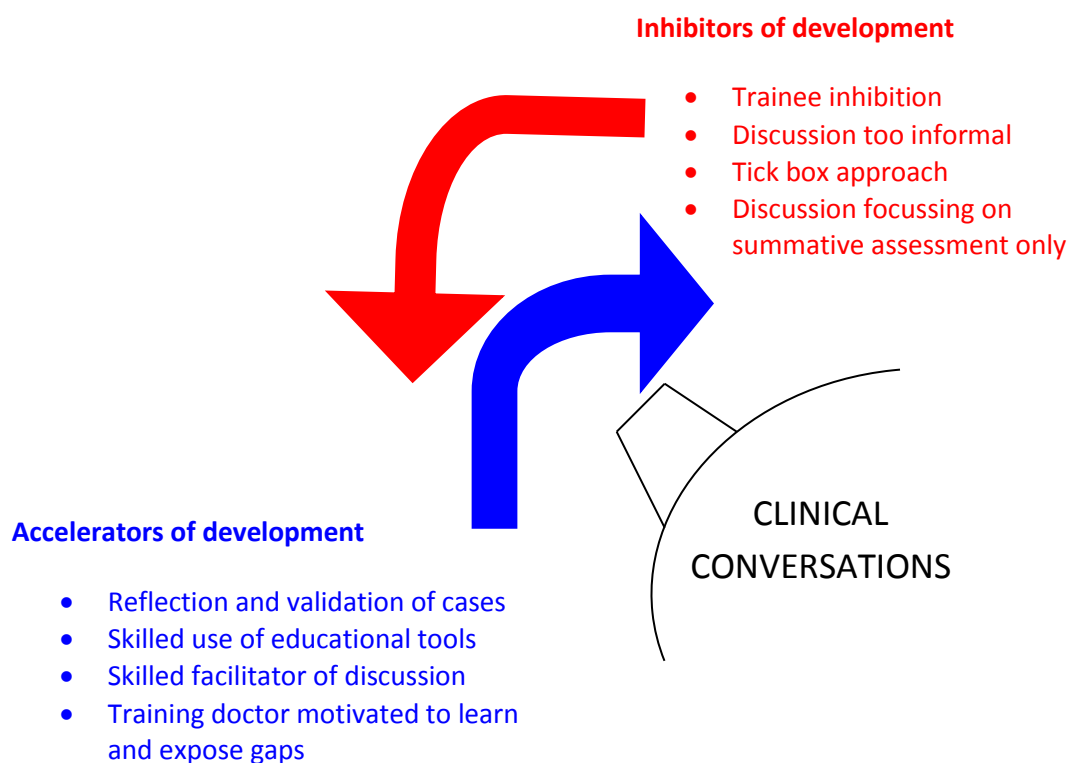


Figure 5.5 Clinical conversations

5.5 Feedback

Carnell (2000) describes feedback as having the following purpose: clarifying goals, giving a sense of direction and purpose, identifying mistakes and providing advice. All of the trainees said that fundamental to their development was getting feedback in some way to work out whether their decision making was correct.

Sources of feedback

The most obvious form of feedback was direct feedback from a supervisor, but there were other sources, for example test results. John discussed the feedback obtained from reaching a clinical diagnosis and confirming this with investigations for more routine decision making:

“You have an alcoholic man come in with piercing abdominal pain.....things that are going through your head are does this chap have acute pancreatitis or a perforated ulcer...It’s a diagnosis that’s easily tested- because you send an amylase off and it comes back normal or very high. So that’s a very simple way of being able to tell whether both your assessment has come up with the right diagnosis. You do get a lot of results from tests that you might not otherwise.” (John Line 210)

That sort of feedback worked well for diagnostic decisions in particular and in the early development of decision making was important. As people made more difficult decisions, using multiple sources of input to help in the decision making process was important. Jane, Cath and Anna talked about the importance of using the notes, knowledge of other staff and getting background information to build up an informed picture:

“The thing that helps me most is what’s written in the notes, so unless the situation’s critical, I’ll always sit down and read the notes first...Hopefully there’s something in there about decision making, ceilings of care, the sense of urgency, just how far are we going...” (Jane Line 186)

“Nursing staff are obviously a constant, you know they’re the constant people looking after the patient and a nurse who knows the patient very well, and sort of advises, that’s really helpful. It’s not so helpful when they go “Oh I don’t know the patient, I’ve come off 2 weeks holiday” but a staff nurse who knows the patient well...and if there’s no one to ask good clear documentation.” (Cath Line 320)

“In general practice you’ve got a history going back years and years so you can get a feel for the person.” (Anna Line 293)

Asking other people to assess a patient could be helpful, either informally in Tom’s case, or through a formal consultation to a specialist in John’s case:

“That’s another way of learning, if you’ve made the decision, but then ask someone else to see the patient and get some feedback from them, whether that’s what they would have done.” (Tom Line 266)

“You refer to a specialty thinking that this is what I think is happening, or what I perceive to be happening, and then get feedback from them once they’ve seen the patient whether they agree or disagree” (John Line 225)

Seeking peer feedback was a useful tool, especially as it could often be done informally. Tina and Dave articulated a form of clinical discussion that happened very informally but was of paramount importance, and a less easily observed part of the clinical learning environment:

“I’ve always taken the opinion that if I’m not comfortable making the decisions, then I would ask somebody. Usually I think just talking it through with somebody at the same level as you, just to say “does that sound reasonable?” and if they think it does as well, you get a bit more confidence that you don’t need to go higher up.” (Tina Line 233)

“The more senior you get, the more solo you seem to work... The worry is that you’re always missing something, so discussion with colleagues helps. I’ve worked with other registrars which helps. That similar level of support is quite good to see if, where I’m at with my decision making is where I should be given my level of training. The kind of peer review side of things has been helpful.” (Dave Line 268)

In a slightly different context John talked about the benefits of coffee breaks in GP practices, where people made the effort to meet up as a source of informal feedback:

“And as long as the GPs are accessible I guess is the ultimate thing, whether there’s an actual opportunity to share things. I’ve worked in GP practices where GPs haven’t been accessible” (John Line 295)

Potentially there were multiple sources of feedback, some not dependent on people, but as the decision making became more complicated the source became more important. It may be peers or supervisors- the important aspect seemed to be to be able to discuss the case more fully. Being able to talk to someone willing to listen and respond was crucial, either formally or informally. As training went on, it was not so much knowledge that was required but the option of checking your judgement.

The importance of getting feedback

The real challenge was for the training doctors to get feedback. Ben described a fairly typical attitude: that you would know if there was a problem, but otherwise you were probably doing fine:

“I don’t think you really got any positive feedback about if it was the right decision, I think if you presume you haven’t been talked to, too many times, you’re probably doing alright!” (Ben Line 373)

Ben talked about the value of hearing when there was a problem:

“You hear of the not correct decisions... I remember being told about a chest x-ray that I put down was normal. And it wasn’t massively abnormal or life threatening but it was “Just for your education, this has come back, the report has come back that it’s not normal, this is why it’s not, and we’re going to call him in to the chest clinic.” (Line 369)

Tom was less clear whether people would contact you, highlighting the uncertainty about whether you are making the best decisions:

“I’ve made phone calls when I’ve come back to work to try find out what’s gone on and followed things up that way. But I don’t know whether people would contact you... you would hope they would. If they felt something could have been done differently because then you’ll know for next time. I don’t think that happens very much” (Tom Line 300)

John talked about the negative impact of only being told when the incorrect decision was being made:

“Sometimes working in atmospheres where you feel that your decisions are being criticised and correct decisions are not being praised, then it just means work is a miserable place to be.” (John Line 350)

Receiving occasional negative feedback when there has been a problem has been a longstanding culture within medicine. It is an important learning mechanism but it misses other aspects. John felt the key was to give feedback on whether you were making the right decision or not:

“I think you need reassurance that the decisions you’re making are good and sound clinical decisions. But I also think you need flagging up when those decisions haven’t been sound or at least that the Consultant feels that it could have been handled in a different way.” (John Line 242)

Cath reflected on her learning needs after qualifying and the importance that regular feedback played in her formative development, perhaps encapsulating the sort of fine tuning fundamental to developing complex decision making skills where there are not black and white answers:

“A lot of basic life saving management and treatment of common conditions we learn very well at medical school so I was happy making those decisions, but it’s evaluating decisions and tweaking. Was there something I could have done better? If you have people above you who are totally disinterested, you can’t go through that cycle, you can’t go through that process” (Cath Line 355)

Tom took another aspect of feedback, contrasting the immediate feedback of a post such as accident and emergency with other longer term situations and the challenging of getting feedback in those situations:

“There are people at the time that you can speak to for advice....but what I’m saying is it would be nice...helpful to know a little further down the line as to whether those decisions had been a benefit.” (Tom Line 295)

Bob commented on the fact that his own self-esteem was to some extent dependent on getting regular positive feedback, and perhaps some of the trainees were referring to reassurance, rather than objective feedback:

“I thrive on people telling me that I’ve done a good job, so when I don’t get that...I lose my self-confidence really quickly.” (Bob Line 336)

Freya, too relied on feedback for self-esteem, but was aware of that need, and actively sought feedback if it was not forthcoming, a trait mentioned in the section of trainee characteristics:

“I rely on feedback from other people- I know I have to strive harder when I don’t get enough feedback. I need that sense of when people maybe have difficulties with me or my judgement, management, behaviour or anything else.” (Freya Line 306)

The nature of feedback

How feedback was given was fundamental to a trainee’s development. John echoed the thoughts of others that in getting negative feedback, it needed to be done in the right way:

“It’s very important that it’s not always where you feel uncomfortable... that you feel that you’re supported by your senior in a hospital environment” (John Line 248)

Maintaining self esteem and avoiding being humiliated were important ingredients.

Tina described her experiences of observing poor practice:

“If it’s a bad decision, you need to feed that back but in a constructive way...I’ve seen people be sort of shouted at in operating theatres when all the rest of the team are around and you’re not going to feel confident to make any decisions if that’s what you think you are going to be facing.” (Tina Line 276)

Kate described a very difficult 6 month period where she felt progressively more and more demoralised because of the feedback she received, in sharp contrast to other posts:

“My last supervisor was very difficult, very demoralising the way in which feedback was given and not in a constructive manner, I just felt like I was doing everything wrong. I was very low and nearly gave up medicine completely.” (Kate Line 293)

The key to effective feedback seemed to be for it to be specific and clear, not wrapped up in emotions, so that lessons can be learned. Ellen discussed the importance of the logic of the feedback:

“You might be on the wrong track, so there’s plenty to gain from the experience of other doctors. I think as long as any decision is kind of rationalised and you can understand it, then you’re obviously more likely to go along with it as opposed to “Just do this, and I’m not really going to tell you why”. And also it seems very random.” (Ellen Line 405)

Ben and Kate described the way in which their supervisors used questions to draw out the logic of decision making from the trainee as a form of feedback, or used clear explanations to guide the trainee:

“They just kind of question why you’ve made those decisions, I think that’s been the most useful thing because it makes you think and it makes you think through what am I trying to achieve by doing x, y and z.” (Kate Line 192)

“I think if there’s a better way of doing it and they explain it to you “There are three options, this one we do at this time, this at another time and this in a different situation. This one’s better because of ...” and say it like that. If it was clear why and you can take away that information for the next time.” (Ben Line 455)

Kate’s negative experience with feedback in one post related in part to an incident where she had made an error but felt it had been blown out of proportion to what had happened. Because she and her supervisor saw the situation so differently, it clouded both the feedback process and the rest of her post:

“I had tried to do all the right things and had gone through the decisions in detail, but when using the computer system the wrong preparation got prescribed... the patient rang up and it was sorted. I realised I had made a mistake by using the technology incorrectly, but he thought I was being arrogant trying to say that I had prescribed the correct drug...He said that really rocked his confidence in my abilities, so that obviously made me feel rubbish. He didn’t give me much of a chance, but that led to more reviews of my surgeries, other doctors sitting in. I had made a little mistake, and was getting all this backlash.” (Kate Line 300)

Kate’s confidence was significantly undermined because the feedback was not just about a decision, but also threatening Kate’s integrity. One of the concerns was that a single error, whether real or perceived, could be blown out of proportion and lead to the

trainer’s view of the training doctor being permanently changed. The trainees felt that feedback had to be specific and about observed actions and behaviours. Feedback, for this group of trainees, was a key component to their ongoing development. It could be extremely positive, affirmative and stretching them further, or it could be the opposite, leading to missing out on a key aspect of development:

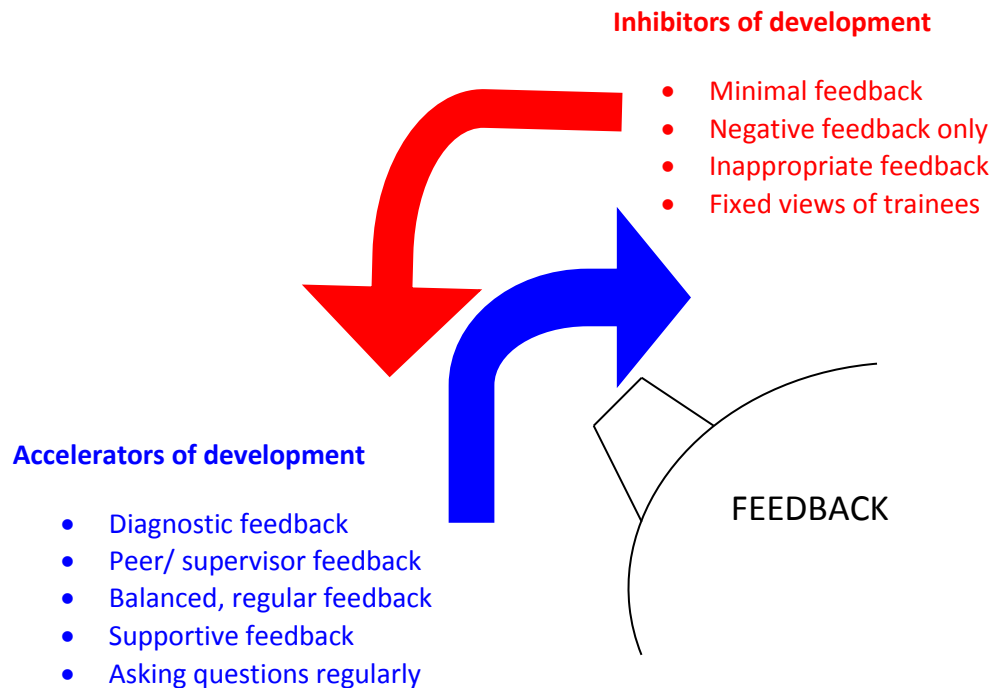


Figure 5.6 Feedback

5.6 Role models

Some of the doctors talked about the importance of some influential people in their training. This was not mentioned by others-it was less clear whether that was because they simply had not come across a key role model, whether for them it was not such so important, or whether they had not recognised or taken advantage of an opportunity. Excellence in role modelling involves demonstration of high standards of clinical care, excellent teaching skills and a distinct set of personal qualities, all of which help to shape the professional development of doctors in training (Passi *et al.*, 2013). Role models are not necessarily labelled as such. Paice and colleagues describe both the importance that role models may have in inspiring, teaching by example and exciting admiration and emulation, but that the process will always be serendipitous and not something that could be relied upon (Paice, Herd and Moss, 2002). They also recognised that often role models had no idea that they were one, and might be flattered

or alarmed by the fact. Freya, Bob and Dave described the value that an individual could have on their own development:

“You observe people, how they manage a case and pick up role models. Some Consultants who have certain abilities that are so striking that you think you may take on some of those features...it’s who you may see as a role model and who comes close to your own character. If you see that somebody has similar characteristics to you, but they put some specific skills into practice, you might be able to adopt them and make the transition to your own practice.” (Freya Line 256)

“Some of it is luck. I got sent the right people at the right time to guide me. To whom I could emulate. So people that I admired and I thought it was good what they did and I wanted to be like that. So a lot of my learning is that I’ve happened to have met many people I’ve admired in, and tried to emulate them... It’s important for me to know their logic, people who can communicate their logic to me. So people I admire have a very logical way of processing the medical problem that’s happening and also the subtle bits.... So when that falls together very nicely I go “Wow, this person’s really good” and that’s what I want to be in the future.”” (Bob Line 362)

“There are a couple of Consultants I worked for in particular who have probably had a big impact on what I did and how I work. And they would question why you do everything, not in a facetious way, but to try and get me to think through why am I doing that. So I was more aware of my decision making process.” (Dave Line 233)

They raised differing points- Freya raised the significance of the character of their role models and whether they could relate to them/ aspire to be like them. Bob felt the key was around their ability to articulate ideas and communicate their thoughts. For Dave it was someone who was able to push him as a training doctor to think more. The role models would not necessarily have been aware that they were being role models, and certainly the training doctors did not make them aware. They were not overtly acting as coaches or mentors, but the doctors were actively observing and assimilating aspects of their practice. In these situations the importance of the behaviour of senior clinicians cannot be overstated, the trainees observed carefully and modelled themselves on those they admired. Whatever the specific way in which they were influential, role models seemed to have a powerful positive influence. It seemed as though it was not just luck that enabled a training doctor to come across a role model. It was also important to recognise a role model, and be aware of what could be gained from that experience.

In rotational posts, it is perhaps harder to have a single role model, especially earlier in training when the length of a post is short. However none of the trainees who benefited

from role models had a single person they looked up to. It was about several people, and perhaps using them as a menu, taking some aspects of learning from different people. For those training doctors who did not have role models, the suspicion was that the role models existed during the course of rotations in the way that they did for others, but that these training doctors were not able to recognise the opportunity or make the most of it. Although the specific way in which they were influential varied, role models seemed to have a powerful positive influence for some of the trainees in terms of changing their behaviour and giving them something to aspire to that they believed they could reach.

In other sections examples of bad behaviour occur from supervisors, and this clearly had a negative effect. The importance of role models arose from the data. In other studies looking specifically at this area they found similar findings in terms of the attributes training doctors seek in their role model. Clinical reasoning skills, doctor-patient relationships, enthusiasm for their field, seeing the patient as a whole, enthusiasm for teaching, involving and communicating effectively with trainees, enthusiasm, compassion and competence were key characteristics among the role models of medical students (Ambrozy *et al.*, 1997). Wright *et al.* (1998) found very similar findings. In this study, the key aspects of role models are summarised below:

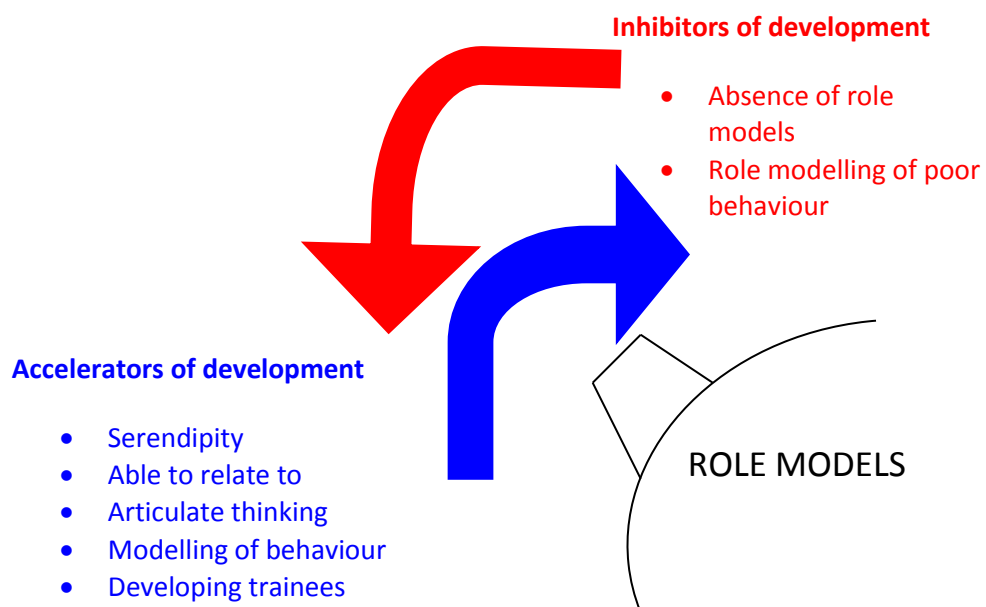


Figure 5.7 Role models

5.7 Summary

The clinical or external environment was a major influence that my analysis has broken down into smaller identifiable components. In reality they are all interwoven, dynamic and in some situations overlap significantly. For the training doctor, their ability to interact and get the most out of the clinical setting they find themselves in will determine how successful they are at progressing. In each component, there are a number of accelerators and inhibitors which can accelerate development or inhibit progress. Because the components are dynamic, the weight of importance given to any one area will depend on individual circumstances. It is possible for example, that a particular individual has one significant component, such as a powerful role model, that could more than compensate for a number of other negative aspects.

Having considered the external influences, the next chapter will analyse the interaction of the components described across the three data chapters. The aim of this study is:

-To understand how training doctors develop skills in practical wisdom

The objectives of the study are:

-To investigate training doctors' approaches to difficult decision making

-To understand and describe the influences on the development of those skills (difficult decision making)

-To identify potential interventions that may help develop these skills

The data chapters explored the first two objectives and by bringing the data together, the third objective can be looked at. In seeking an understanding of practical wisdom, I have investigated difficult or complex decision making. The three components important in developing complex decision making are:

1. An overarching continuum "Gaining Experience" which describes the processes that training doctors went through in order to get to a point where they can make complex decisions. This section covers the progression from routine decision making through to making complex decisions, and being able to articulate them to others. This largely followed a time continuum, but there were also additional elements to gaining experience that did not fit with a continuum, but contributed significantly to the gaining of experience:

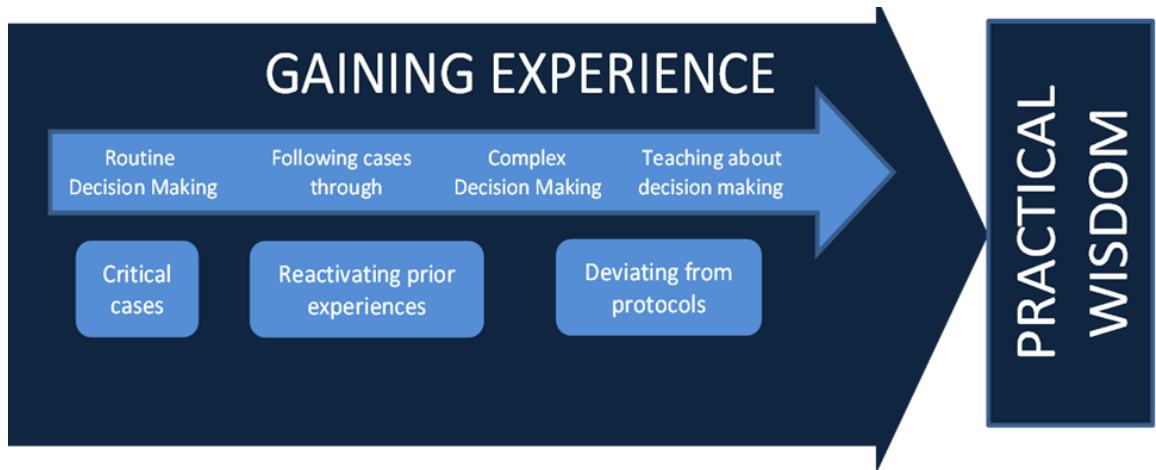


Figure 5.8 Gaining experience

Alongside this are two key relationships that influence the journey of “gaining experience”:

2. Internal influences: these are aspects within the doctors themselves that influenced how able they were to gain as much from the environment they were in:

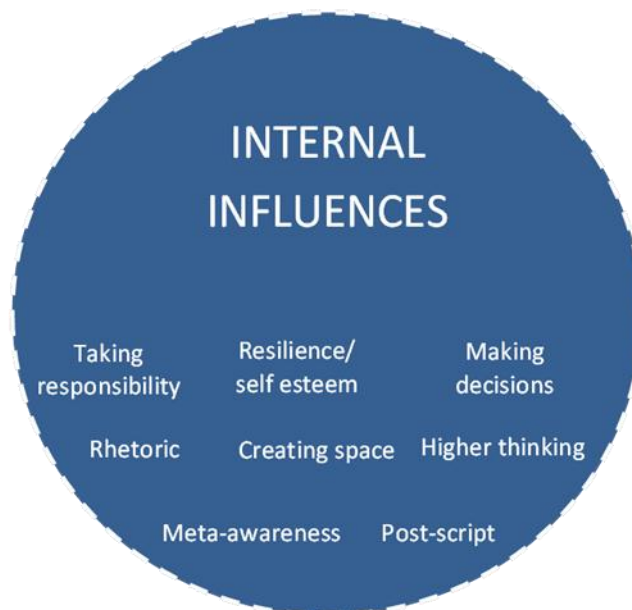


Figure 5.9 Internal influences

3. External influences: these were the interactions between the doctor and the training/clinical environments that they encountered, many of these were not under the control of the trainee:

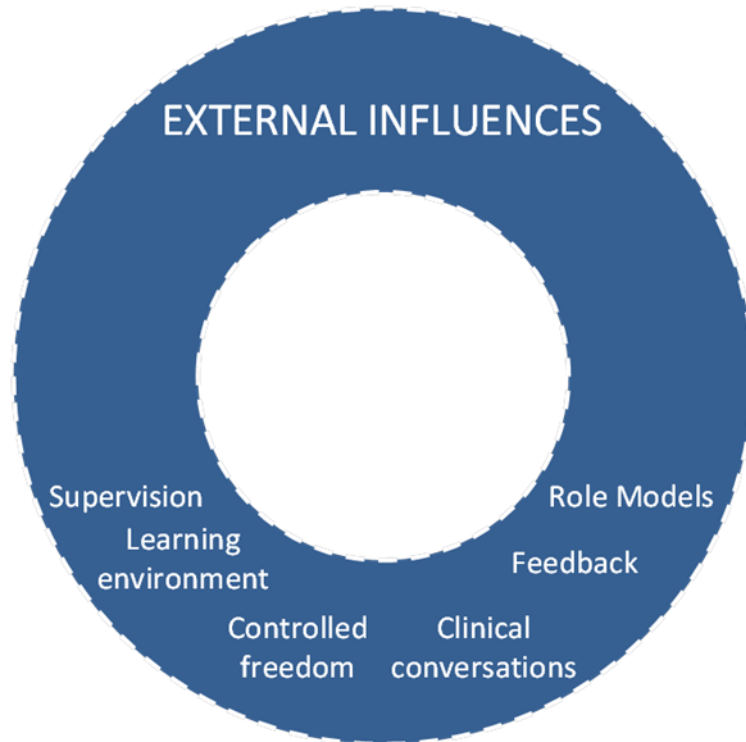


Figure 5.10 External influences

In the diagram below, I have illustrated this by showing the internal influences and the dynamic nature of how these interact with the external influences. The overall effect of these interactions either helped accelerate the doctors' process of gaining experience in this area, or sometimes even held them back:

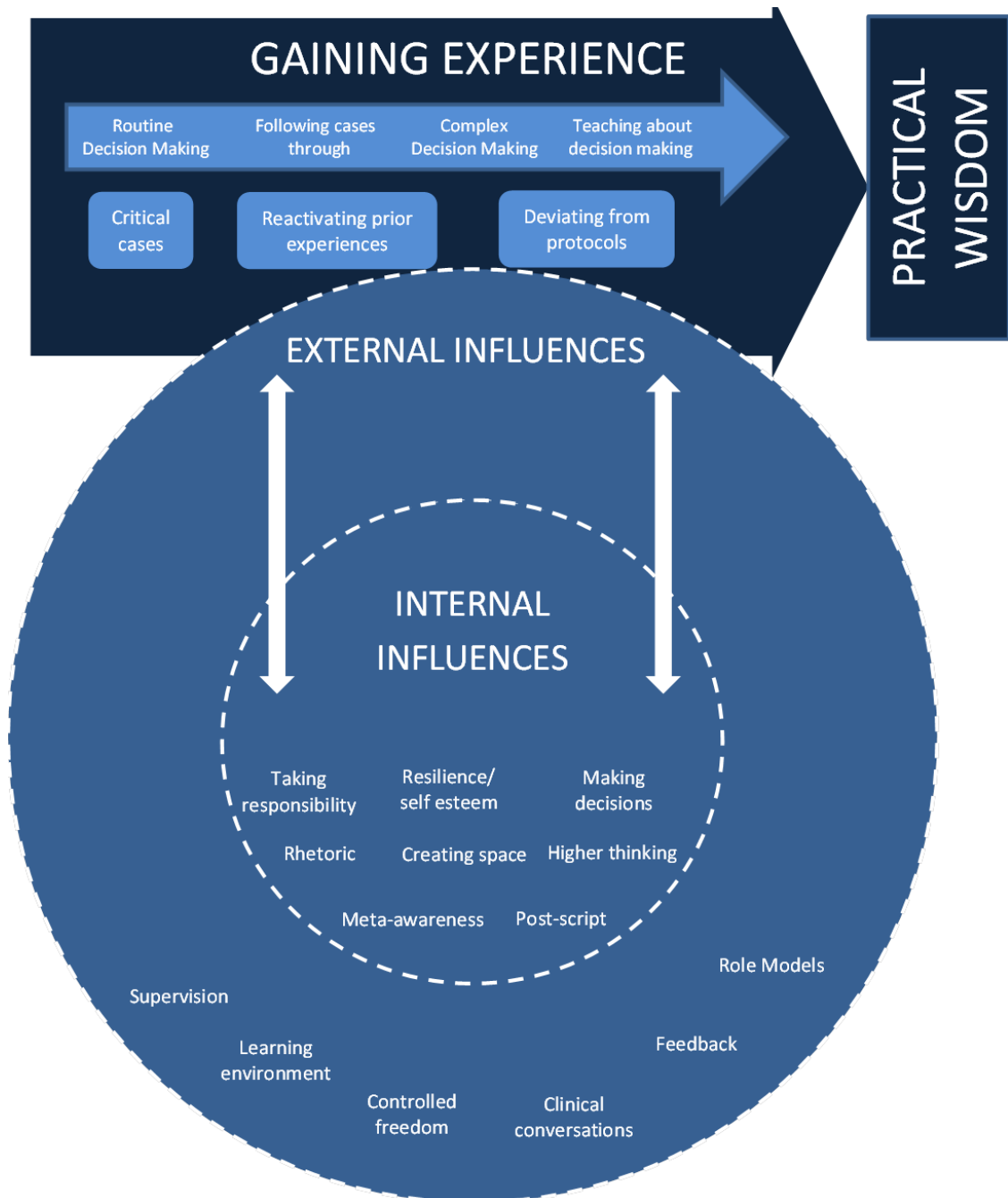


Figure 5.11 The development of practical wisdom

This diagram illustrates the three components emerging from the data, but they are somewhat disparate and the linkage between them needs to be understood. The next chapter sets out my understanding of how the three components interact.

Chapter 6. Bringing the Model Together- Key Enablers

The preceding chapters have looked in detail at the process of gaining experience, and the two key interactions: internal and external influences. The model developed considers key experiences that doctors gain, alongside the importance of the role of the individual training doctor and their ability to interact successfully with the external and internal environment that they encounter. These interactions serve to dynamically moderate their experiences. This chapter will consider these three areas in relation to the training doctors encountered, existing literature and how the three factors come together, before considering the implications for medical training. The whole process is complex with a range of situational, psychological and social mechanisms taking place which I have tried to make sense of. In understanding the data to get to this point, I have been pragmatic in interpreting the doctors' direct views, and analysing the data and what it means in order to understand and describe the process in the way it has been set out.

6.1 Experience and gaining expertise

It is clear from my data that the training doctors went through a recognisable continuum, which I have called "gaining experience". In this, through their interactions with patients, the roles that they carried out, their reflections and their growing skills, they were able to move from initial routine decision making to more complex decisions where the solutions were not always clear. The routine decisions were characterised by pattern recognition and often around diagnosis, where simple tests or through a supervisor they had instant feedback. This built up through seeing more complex cases where the doctors needed to be able to have some continuity with patients to see the impact of decisions, to making more independent decisions often with ethical or moral dilemmas.

The work that this continuum most resembles is that of Dreyfus (1986), a 5 level model of skill acquisition, less about gaining factual knowledge and more about learning how to navigate through situations:

Level 1 Novice

Level 2 Advanced Beginner

Level 3 Competent

Level 4 Proficient

Level 5 Expert

The main emphasis of this model is on the acquisition of skills through learning from experience, building on previous experiences and thinking about what to do. By the final level (expert), the skills have become almost intuitive without the need for significant deliberation. Deliberation is needed only where a new situation is encountered or if problems occur; analysis of problems is rarely evident in everyday behaviour which is much more intuitive.

In my research, the continuum of gaining experience works to an extent with the Dreyfus model in terms of the skills the doctors have, with some of them demonstrating skills at the level of proficient or expert, especially where they are able to teach others about their decision making. However, the model of skill acquisition does not emphasise enough some of the complexities of progressing to being an expert: planning, emotions, thinking and interactions that I found in my data, which has led to me adding the additional aspects of internal (generated by or within the training doctor) and external challenges (within the clinical environment). The implication of the Dreyfus model is that skills are acquired through a progressive linear process. My data does not fully support this idea, as some of the training doctors could accelerate this process suggesting a greater degree of complexity than the Dreyfus model alone. Understanding what enables that acceleration is the most interesting aspect of this study. Additionally within the “gaining experience” section I have highlighted three areas: critical cases, reactivation of prior experience and deviating from the protocol which are important for some of the trainees, but did not necessarily follow the same continuum because, if present, happened in a more random way.

In the medical world, it has been suggested that at the stage of graduating, doctors are operating at the level of advanced beginner and then go through the subsequent stages (Batalden *et al.*, 2002). Novices require considerable guidance, whereas clinicians in the competent stages must actively take decisions and take responsibility for them to integrate this into their understanding. It is perhaps too simplistic, certainly on the basis of the doctors encountered in my study, to be able to position them on a continuum dependent on their stage of career. In reality, the doctors interviewed were at different

levels of decision making. This was as much dependent on individual factors as the stage in their career pathway.

6.2 Understanding the interactions between gaining experience and internal/ external influences

The data chapters set out the key areas, gaining experience and internal/ external influences that emerged from the data. I have described each of these areas and the way in which positive interactions could accelerate development in the previous chapters. In thinking about how these processes come together, I consider three important aspects which help to moderate the impact of these influences on an individual's experience:

- Self efficacy
- Agency (in particular relational agency)
- Structure

I have given these three areas particular importance because they seem to be important concepts which link the three areas of my data. In particular I think they provide a way of illustrating how an individual training doctor and an individual training environment can accelerate the "experience" of the training doctor in developing clinical judgement. That is helpful from an explanatory point of view but also in thinking about how to develop learning environments that are fit for purpose and training doctors who are able to get the most out of those environments.

6.3 Self-efficacy

Self-efficacy is an important concept related to resilience and self-esteem but with an important theoretical underpinning. Bandura's (1977) social learning theory explains how people learn from each other. It describes the cognitive process of learning that takes place in a social group. The effectiveness of this depends on how individuals manage the relationships and dynamics of that group which is learned through observation, imitation and modelling. How much they are able to get out of the process will depend on their ability to take note of what behaviour is going on, retain the key aspects and reproduce the behaviour underpinned by the motivation to engage.

The concept of self-efficacy is important to this process. Bandura (2002) considered self-efficacy to relate to an individual's belief in their ability to succeed in a particular task (see table below). Self-efficacy is subtly different but related to self-esteem which

links with an individual's feelings of his/her own worth. Self-efficacy is related to particular activities and so will vary depending on the activity and will only impact on self-esteem if the individual believes the activity is connected significantly to their self-worth.

Self-efficacy is influenced by external experiences and how we perceive ourselves.

Bandura stated that the key factors that influenced self-efficacy were:

- experience/ accomplishment: success increasing and failure lowering
- modelling/ vicarious experiences- seeing people succeed in the task we are seeking to do, particularly if that person is perceived to be similar to oneself.
- social persuasion- in general encouragement improves self-efficacy and discouragement will decrease it.
- physiological- physiological signs of nervousness may be perceived as normal and unrelated to ability leading to higher self-efficacy in some whereas it may be interpreted as being a sign of inability in those with lower self-efficacy.

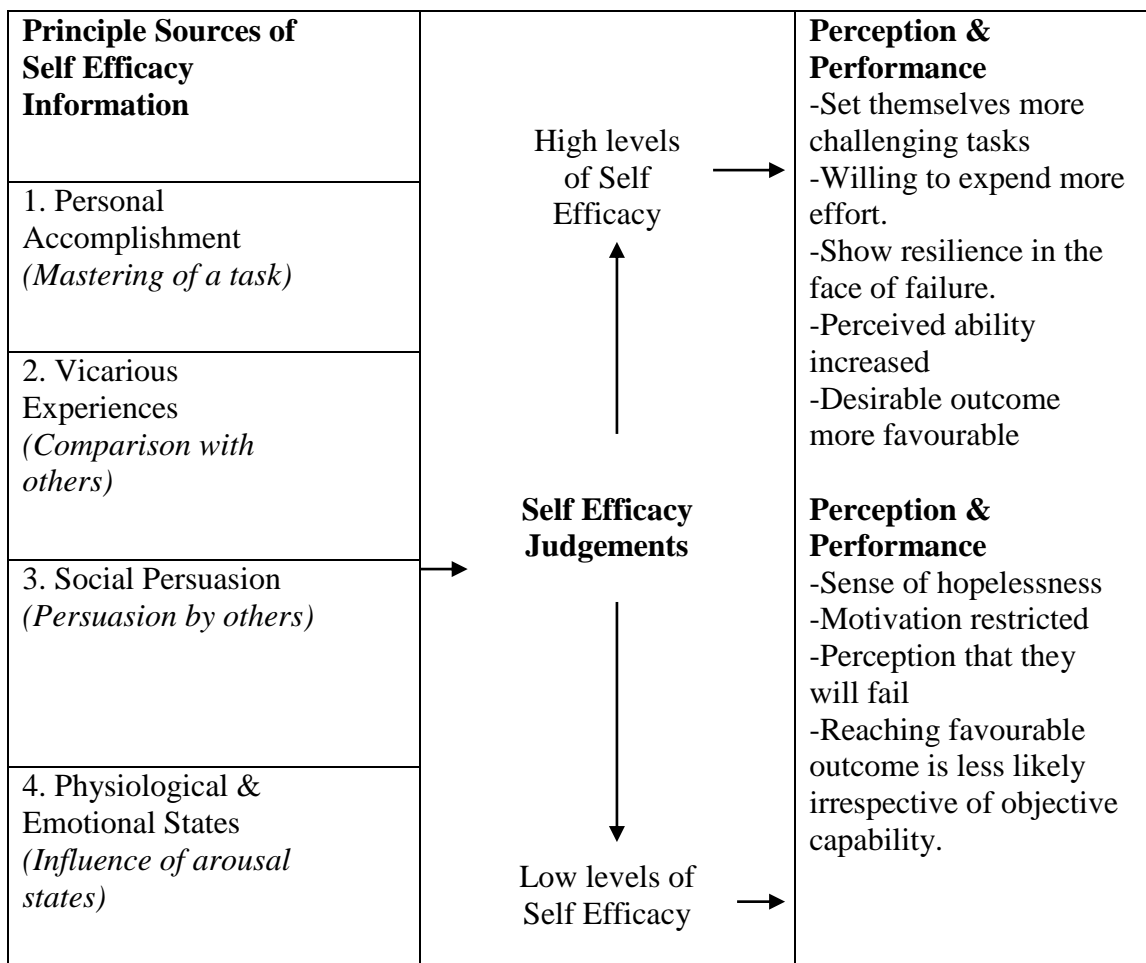


Table 6.1 Self efficacy

In this study, the analysis showed experience, modelling and social persuasion to be important. Physiological factors did not feature but were not specifically sought.

Self-efficacy can impact on how we approach tasks and challenges, people with high self-efficacy are more likely to feel in control of their lives and view a difficult challenge as something to be tackled, whereas someone with low self-efficacy may try to avoid it and feel out of control. It is generally important that there is a match between self-efficacy and competence. Self-efficacy can potentially be measured and one study among nursing students looking at the impact of self-efficacy showed that those with higher self-efficacy scores achieved better because they were able to take control of their own learning, whereas those with low scores often avoided interactions (Andrew and Vialle, 1998). This is mirrored in my study participants.

Turan *et al.* (2013) reviewed the literature on self-efficacy in medical education and found that while very limited, it did show at undergraduate level that there is evidence of the linkage between self-efficacy and achievement, initial “deep learning” approach, and career development. The paper particularly highlighted the potential for low self-efficacy to lead to avoidance of situations, and the longer term impact that that could have on career opportunities. That resonates with my examples of trainees avoiding discussing cases because of negative experiences, an understandable response but one which does not help development. Additionally low self-efficacy can lead individuals to believe challenges are tougher than they are which may limit their ability to solve problems. A crucial aspect, when thinking about the usefulness and implications of some of my findings, is that self-efficacy can improve over time. The authors suggested that engaging with the assessment and improvement of self-efficacy beliefs could lead to better emotional well-being and career development (Turan *et al.*, 2013). This is an aspect I will return to when considering implications of my research.

Young *et al.* (2012) looked at factors that improved students’ self-efficacy during a clinical attachment, finding that observing role models and practising skills related positively. An interesting finding was that receiving feedback did not coincide with an improvement, and the researchers wondered whether this may be more to do with the quality of feedback and the way it was given in this situation, rather than a more structured approach at an appropriate time in an appropriate location. In my research

identifying role models was an important aspect for some participants and “quality” feedback played a vital part.

The reason self-efficacy is of particular relevance in this study is that it is a mediator of behaviour but can also change with greater experience or intervention. A key practical element is the finding in one study that a remediation programme using group work and a range of strategies to improve self-efficacy, could lead to improvements in self-efficacy scores, OSCE performance, enhanced confidence, and self-belief and workplace performance (Malau-Aduli *et al.*, 2013). This programme was aimed at improving self-belief through a range of activities designed to challenge and extend participants to a higher level of performance. Some of these were conventional approaches to improving exam performance such as practise OSCEs with focussed feedback, clinical teaching etc. The innovative aspects were around anxiety management, confidence, and developing participants’ individual presence/ voice management. The latter particularly fits with some of my findings around the importance of developing the training doctors’ rhetoric. In healthcare, the major research in relation to self-efficacy and interventions has been in regard to patient programmes around self-management, rather than in medical education.

Belief in one’s efficacy is a key personal resource in personal development and change (Bandura, 2006). It operates through its impact on cognitive, motivational, affective, and decisional processes. Efficacy beliefs affect whether individuals think optimistically or pessimistically, in self-enhancing or self-debilitating ways. Even in the recollection of the patient stories, the training doctors’ efficacy beliefs influence the way they describe their experiences. Such beliefs affect people’s goals and aspirations, how well they motivate themselves, and their perseverance in the face of difficulties and adversity. Efficacy beliefs can also shape people’s outcome expectations- whether they expect their efforts to produce favourable outcomes or adverse ones.

Bandura also found that efficacy beliefs determine how opportunities and impediments are viewed. People of low efficacy are easily convinced of the futility of effort in the face of difficulties. They quickly give up trying. Those of high efficacy view impediments as surmountable by improvement of self-regulatory skills and perseverant effort. They stay the course in the face of difficulties and remain resilient to adversity. Efficacy beliefs affect the quality of emotional life and vulnerability to stress and

depression, and determine the choices people make (Bandura, 2006). This was seen in my data with some of the doctors showing signs of low self-efficacy (for example Bob/ Kate, page 64 or Tina, page 86), where others demonstrated high levels (for example John, page 62 or 64).

In considering my model, self-efficacy is an enabler between some of the crucial internal influences such as resilience/ self-esteem, taking responsibility, post-scripts etc. and how they relate to the interactions with the clinical environment. For those training doctors with greater self-efficacy in these crucial areas they were able to accelerate their progress by taking advantage of the external clinical environment, whereas others were held back. Self-efficacy is a concept that resonates with the data and helps to explain why people experience the same situations in different ways, as well as an element that seems to hold some doctors back while others thrive. In this study for some individuals, their self-efficacy in this area seemed to be of fundamental importance, irrespective of the outside influences. In considering the implications of my work, self-efficacy is importantly also potentially an area that can be developed. However self-efficacy on its own is not enough. The training doctors needed to be able to utilise their self-efficacy through the quality of their engagement with others. This incorporated both their individual skills and the environment they were in. The next stage is to consider how the individual interacts with their environment, agency.

6.4 Agency- Relational agency

Agency is about the capacity of a person to act in their environment, and so is relevant in thinking about the relationship the doctor has with the training environment they encounter. Agency is related to self-efficacy (Bandura, 1982) as a higher sense of self-efficacy may enable someone to act more on their will and achieve more. The sense of self of an individual and their professional agency are closely linked. (Toom, Pyhältö and O'Connell Rust, 2015). Individual beliefs influence the actions people take in the work setting and the subsequent response they receive back from their team.

In understanding the interactions between the training doctor and their environment, the work of Billett (2006) and Edwards (2005) is of particular interest. Billett explores the relationship in learning between personal agency (and the cognitive processes occurring within an individual) with the social experiences that individuals go through. The social interactions will vary for individuals because even if the interaction is the same,

individuals' interpretation of the social experience will differ. The relationship between the two components he describes as being interdependent- both important and inseparable.

Edwards' work focusses on the recognition that professional work is constantly evolving and changing, and therefore people need to have the capacity to work with others and across professional boundaries and settings. This incorporates the concept of agency, but situates it not just in regard to individuals but based around relationships. Relational agency is "the capacity to align one's thought and actions with those of others in order to interpret problems of practice and to respond to those interpretations". It is about having the capacity to recognise another person as a resource and to get the most out of that resource- importantly it is something that can be learned.

In her work researching student teachers, Edwards found that through changes in training structure, they frequently had limited interaction with other teachers, their actions were largely around delivering outcomes with feedback related to that, and they were less able to deal with uncertainties or challenges posed by the children they were teaching (Edwards, 2005). They sometimes avoided situations which were unpredictable and might put their performance at risk. The parallels in this study are in relation to changes in the training of doctors and the focus on outcomes. The doctors able to accelerate their ability to deal with complexity in decision making were able to form key relationships, recognise the opportunities they presented and take advantage of them (for example, John, page 61 or Dave, page 66). On the other hand, those who were struggling more, were able to hide that by avoiding many of the situations which would most help them develop, but were also potentially threatening to them (for example, Jane, page 62 and Anna or Ben, page 93).

Edwards (2011) refers to the "why" of practice, understanding why we do certain actions, and the importance of forums which allow discussion between professionals to sufficient depth to reveal motives, values and categories (professional language) in issues and individuals to enable this learning to take place. The real attraction of Edwards' work in this area is that it helps to think about solutions to the reality of current training, rather than the loss of some of the models of training that perhaps incorporated more emphasis on dialogue, apprenticeship etc. Focus can be given to how our learners engage with the resources available to get the most out of them "knowing

how to know who”, and be a resource themselves. In my work, those accelerators of learning included doctors finding role models, seeking opportunities, weighing up and thinking about what they were participating in, and ultimately teaching others themselves. This fits with the idea of “heutagogy” where learners determine their own learning programmes within the context of their needs, and are not being purely reliant on teachers or the curriculum, and is much more consistent with creating an adult learning culture (Hase and Kenyon, 2005).

The ability of individuals to make choices and the “structures” that they encounter (that may influence the opportunities that they have) are hard to separate out. Self- efficacy and relational agency are largely about individuals and in this study are considered in terms of how training doctors can get the most out of the opportunities available. In my data, these two aspects were very important in developing difficult decision making skills. I want to turn now to thinking about the “structures” that training doctors find themselves in and their role within that structure.

6.5 Structure- the clinical environment

As this project has evolved, my understanding of factors that play key roles in the development of “practical wisdom” has shifted. The learning environment is important but I realise now that there are a number of individual factors that can be significantly influenced, so that even if the learning environment is unchanged, the individual learning can be improved. Nevertheless, I consider the learning environment to be vitally important and in this context, the “structure” that training doctors work in. The next sections will explore the current training structure as well as thinking about the clinical team.

Structure and agency are related, weighing up whether people act as individuals or within their wider contexts. Structure is the environment or context in which agents act and as such they are inextricably linked. That context may at one end set very clear priorities or boundaries which either increase or reduce the ability of an individual to act independently. For example, a clinical environment with a very powerful clinical leader may create very strong structural issues which limit the ability of other members of the team to act as independent agents. However it may never completely suppress agency which may manifest as small acts of rebellion, or disgruntlement. The other extreme would be to have a very limited “structure” where people are free to act as independent

agents acting on their own free will. In history powerful individuals perhaps best demonstrate the ability of an agent to put into place their values, beliefs and will, with structure not playing a significant impact, whether that be for the benefit or harm of others. The ideal is to have a structure that is highly developed to encourage learning and agency to flourish. In my findings, when a training doctor with high self-efficacy and agency encountered a positive clinical learning environment, learning was significantly accelerated (for example, Jane, page 88 and Bob or Dave, page 105).

Giddens (1984, p.258) developed structuration theory as a means of explaining the relationship of agency and structure. He considers humans as purposive actors, who know what they are doing and why most of the time. At the same time, the actions of these individuals are embedded in the social contexts that their activities are situated and which causally influence their nature. Both are dynamic and influence each other. Agents create and change structures and vice versa creating a dialectic relationship. Activity Theory is one model which considers people as socio-culturally embedded actors and sets out a framework for understanding how activities are carried out by individuals (subjects) in a group (community) working towards a goal (object), working within the rules and organisation/ set up of the system they are working in (Engeström 1999). I will address structure in terms of medical training and the teams people work in, but from my data also believing strongly in the ability of individuals to act dynamically as agents within those structures, supported by some of the individuals in this study.

Biesta and Tedder (2006) contribute to the debate about agency versus structure by considering “ecological agency”. Applied to medical training, ecological agency is about the way in which the training doctor responds to difficult situations, and therefore results from the interaction between an individual and the circumstances they are dealing with. In other words the training doctors “critically shape their responses to problematic situations” (Biesta and Tedder, 2006).

This means that the doctors are neither completely independent of the environment they work in, or fully constrained but instead agency is achieved through the quality of “the interplay of individual efforts, available resources and contextual and structural factors as they come together” (Biesta and Tedder, 2007) in the individual circumstances of the doctor or decision being faced.

Emirbayer and Mische (1998) consider agency as combining influences from the past, orientations towards the future and engagement with the present, with varying degrees of importance for any given action. The influences of the past resonate with much of my data, for example the pattern recognition, previous cases or previous relationships with supervisors. The future components resonate with those doctors who were very focussed and driven on what they were trying to achieve. Much of the data fits with the present in relation to decisions being taken. They view agency and context as varying over time due to individual changes and changes in the context.

The interactions are primarily social, “always a dialogical process by and through which actors immersed in temporal passage engage with others within collectively organized contexts of action” (Emirbayer and Mische, 1998).

6.6 Situated learning

In thinking about the structures that individual training doctors work in, the next area to consider is the clinical team. When considering the interaction of learners and their learning environment, the work of Lave and Wenger (1991, pp.29-58) is important. Instead of viewing learning as something that is done discretely as a result of teaching, they described “situated learning” where learning primarily takes place in everyday life through engaging in a “community of practice”. Wenger (1998, pp.55-84) described a community of practice as being “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” These communities may be formal or informal but share three key components:

- A shared domain of interest with members committed to the domain
- A community which engages in shared activities and discussions, enabling them to learn from each other.
- Members are practitioners who share their resources with each other- experiences, issues, solutions.

Communities of practice are one way of looking at how teams learn and develop, especially where those communities of practice may not be functioning well. The purpose of considering communities of practice is that it fits well with some of the challenges that training doctors faced in my study. We can consider that they were potentially part of several communities of practice, including their direct clinical team, the team on their shift and their group of peers. This fits with the evolving work of

multiple communities of practice becoming “landscapes of practice” (Wenger-Trayner et al. 2015, p13). The challenge is that some of those are clearly established communities, and others come together for short periods and may not recognise themselves as communities.

Thinking about the clinical team, the biggest challenge for the training doctor is that they may only join it for a short period of time and need to engage either as a peripheral participant or more fully. I have already looked at some of the self-efficacy issues which may impact on the engagement. There is a responsibility on the community to create an environment that welcomes and supports newcomers. In my study we had clear examples of this, where through leadership and culture the newcomers were encouraged to participate more, where they could risk mistakes and question others (for example, Jane or Cath, page 88). On the other hand, there were also communities which stifled discussion, and discouraged participation (for example Jane or Cath, page 89).

It is argued that for communities to really work (and indeed for clinical care to be effective), the learning curve of new members of the team needs to be decreased, perhaps through mentoring or induction (Lesser and Storck, 2001). Wenger, McDermott and Snyder (2002) identified some key aspects to making a community more effective, including recognition of the community, being outward looking and having outside involvement, having some leaders and others more passive but with the opportunity to alter roles, opportunities for regular dialogue and review of goals, and being creative. With those in place, communities can flourish and learning flow. In the narratives of some of the doctors in my study, those communities exist. They allow for the rapid acceleration of development as long as the trainee is in a position to take advantage, through their use of their own self-efficacy and relational agency. On the other hand, also recognisable are failing communities, and teams that would not recognise themselves as a community of practice, where learning has been stifled and the doctors may feel that their learning has stalled or in some cases even gone backwards. Relevant in thinking about successful team environments is the work of Lingard (2009) who considers the role of “collective competence” in healthcare teams. In this she considers that it is important to have both high performing individuals but also that the whole team needs to function together. Otherwise you risk having an incompetent team comprised of competent individuals. Fundamental to this is social interaction, shared experience and developing tacit knowledge.

More challenging is thinking about communities of practice in relation to out of hours where considerable learning takes place. Here, there is the possibility of those communities evolving more naturally with training doctors taking more of a leadership role but with membership of the community changing quickly. Within regular clinical teams, clinical supervisors are very important in setting the tone, encouraging discussion, seeking an understanding of the training doctor's thought processes. The training doctors in my study had very mixed experiences and described the difference between good and less good supervisors and the impact on them and the team. For some, it made a significant difference to their ability to develop practical wisdom.

6.7 The interaction between internal and external influences on accelerating or inhibiting development

Having considered important concepts of self-efficacy and relational agency/ structure, I want to describe the relationship to my findings. In describing my model generated, I consider that there is an overarching continuum "gaining experience" in decision making, as the training doctors go from more routine decision making to being able to make more complex decisions. This was an important process recognised in all the doctors in this study. Alongside this, there are some other key components such as encountering critical cases that are helpful in gaining experience but do not develop in a continuum. People working in clinical environments will recognise that a person's development along this process is not uniform and varies considerably. This may be explained by the way internal and external influences interact with the experiences of an individual training doctor. The effect of this can either be to accelerate, slow down or have no impact on the speed of development. The structure that the agents (training doctors) work in is the external influences of the clinical environment that they work in.

Self-efficacy and relational agency, can be conceptualised as dynamic enablers by which an individual uses their own resources, and is supported to get the most out of the structure that they are working in. Having strong internal or external influences, or ideally both accelerate the progress. From my data, it is also possible for those influences to slow down development or worsen it, if the influence is strong enough.

I consider these enablers crucial in determining how a specific experience or situation will impact on someone's training, or their building of experience. The enablers start

with self-efficacy, the most internal of the factors. This considerably impacts on their relational agency, the way in which they interact with the clinical environment:

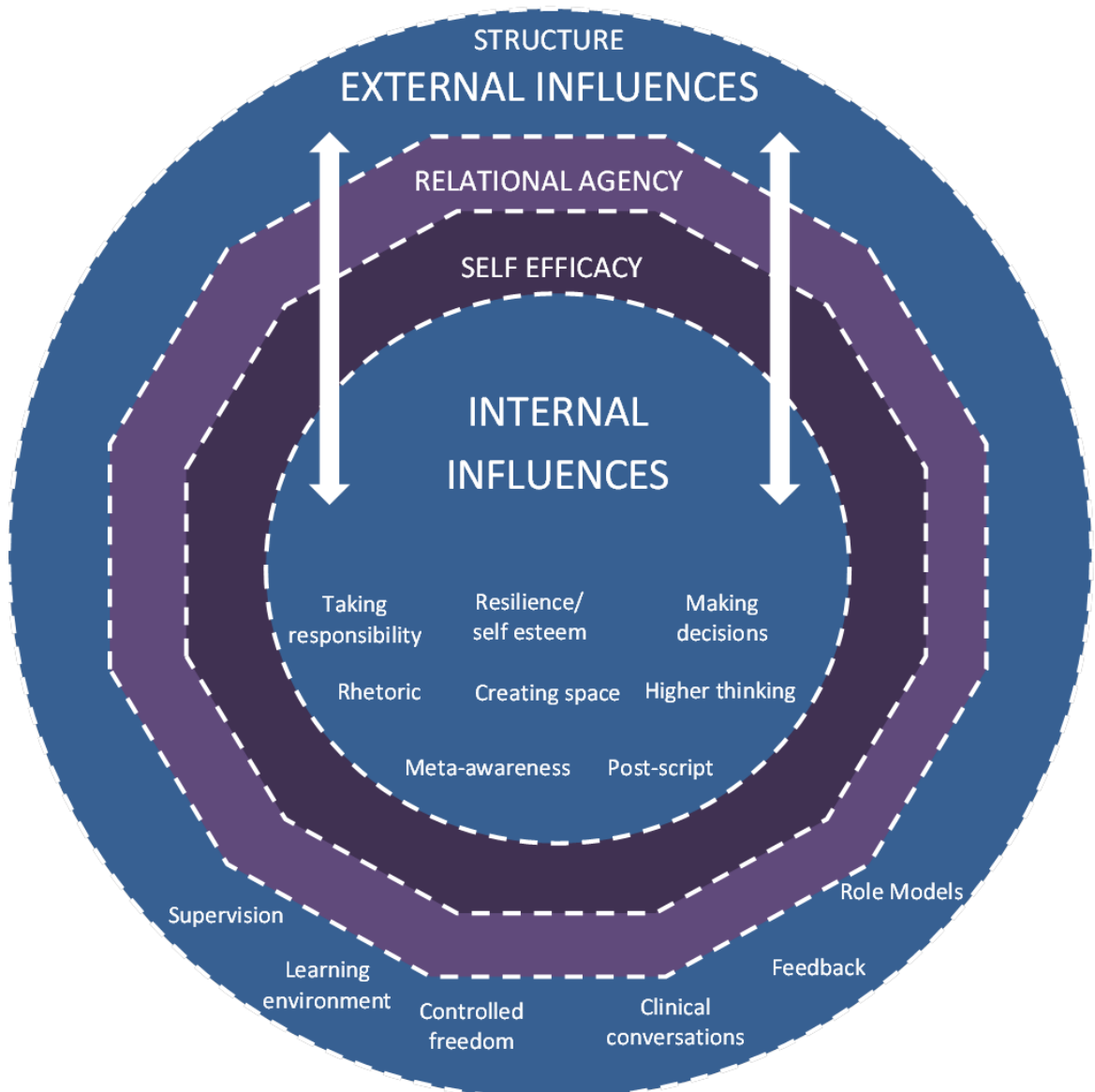


Figure 6.1 Self efficacy and relational agency as key enablers

There is then a final crucial relationship between the internal/ external influences and the gaining of experience in this area. These enablers can work in a number of ways which I will illustrate using some of the study participants. Those with a strong set of internal influences through high self-efficacy and relational agency shape their experiences and development, accelerating the process. Positive external influences will also do the same, for example a dynamic supervisor. For any given event, all of the doctors may have experienced the same event, but for each doctor the impact on their development may be quite different. They may feel completely contrasting emotions about the event and their interactions, and the team that they work in may respond in a

constructive or destructive way. This tries to illustrate why a given challenge may have a completely different effect on an individual, but also how an individual can shape events. By trying to understand the enablers, we can help to aid acceleration of development.

The diagram below shows the important areas covered in the three data chapters: gaining experience, internal and external influences with enablers to show the key connections between the three:

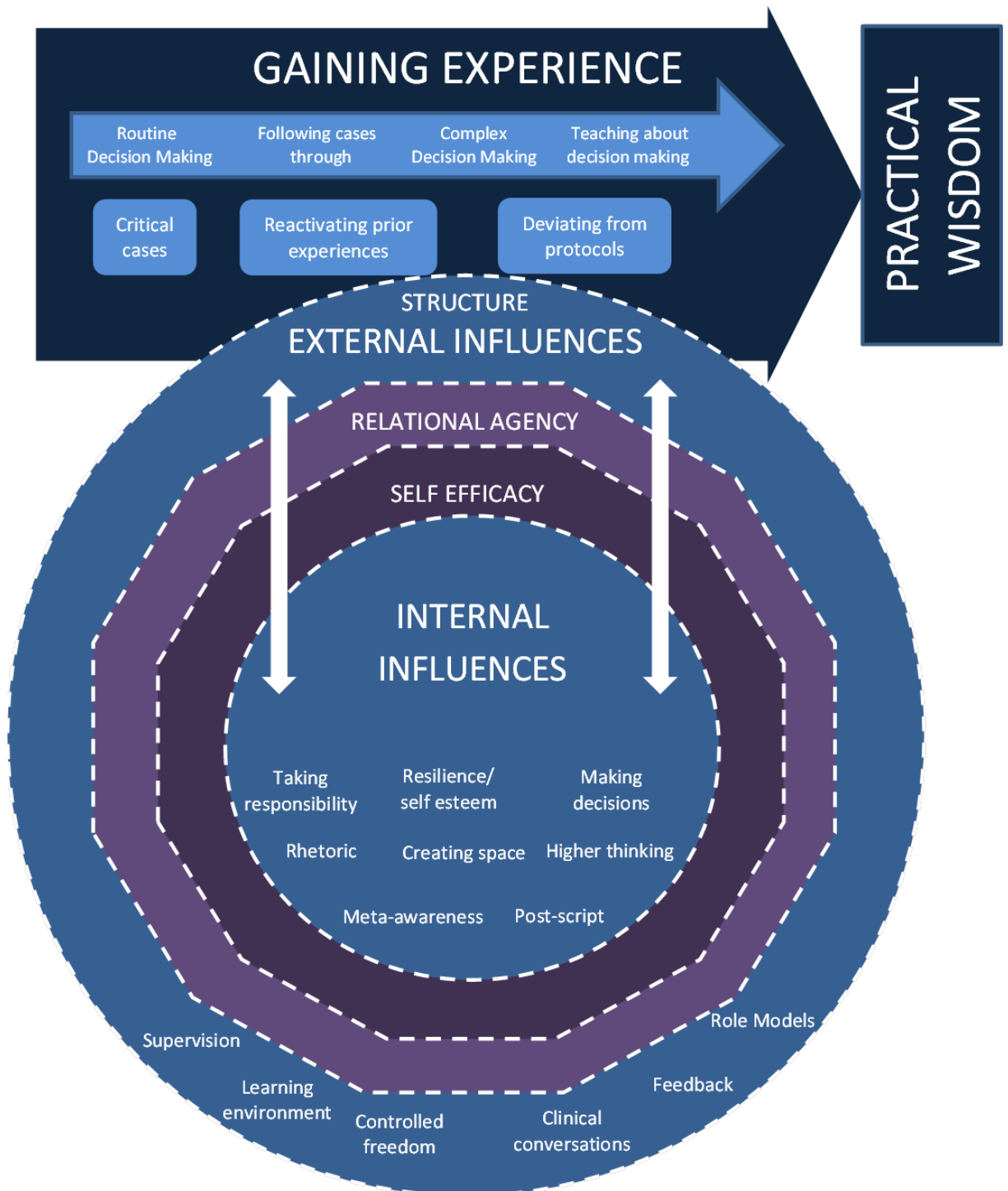


Figure 6.2 The development of practical wisdom- a conceptual model

6.8 The relationship between experience and the internal and external environment- the training doctors

The practical application of the model is best considered in relation to the doctors studied in my research. In the data chapters, through the process of analysis the individual doctors have been broken up to develop the emerging ideas. I now want to

consider some of the participants as a whole again to understand how the model applies to them. The doctors described have been chosen because they either represent the middle ground of the model (Anna and Jane) or are at a particular extreme (Bob, Cath, Dave Freya and Kate). The individual doctors and their stories are described in more detail in appendix 2). The diagrams presented later represent my assessment of their experiences and influences, based on their interviews and have been used to verify the model.

The beginning of training

I will start by contrasting two doctors towards the beginning of their training, both in similar positions, Jane and Cath.

Cath

Cath was able to articulate key areas that were relevant to her training experiences. Accident and Emergency had played an important part in her training- she had obtained a volume of experience which she had reflected on and could compare/ contrast patients to. She was comfortable with moving to more difficult decisions and involve patients and families in those areas, alongside her own clearly articulated logic. Even though relatively inexperienced, she had been involved in a number of critical cases which had helped to focus in her mind why she had taken particular decisions, and build confidence from feeling they had been managed well. Her patient-centredness naturally took her away from protocols at times to personalise decision making, but not without discussing any deviations first. Her “experience” in decision making was accelerated (exposure to and the ability to make decisions) compared to others in the study and from what might have been expected given her stage of training and role.

Internally, she was usually clear in terms of her communication and what she wanted when she spoke to her supervisors. She was happy to discuss cases, but when she did she was clear whether she wanted reassurance or genuinely was not sure what to do, which was rare for her. She was able to ask questions, to try to understand decisions being taken. She was thoughtful and analysed cases, building small rules to help her reason, based on knowledge and experience she acquired. She showed considerable evidence of higher level thinking and self-awareness. That enabled her to make decisions as well as building in safety nets. The internal influences helped considerably to shape her experiences.

She gave a good example of creating space and not rushing her decisions when faced with a patient who was deteriorating and she felt was heading in the wrong direction with nobody taking an overview. Even though this space was only about ten minutes and some of the team did not agree with it, the patient gained from that time to think and become involved in the decision. This was an example of one of the most complex levels of decision making in the accounts of the training doctors, by one of the most inexperienced doctors. It also led to an important consequence- she was overruled on the decision in difficult circumstances by a more senior doctor. In other circumstances, doctors were profoundly affected by this and it was damaging to their self-esteem. In this case, Cath gained great confidence partly because of her own self-esteem but also because subsequent events and decisions affirmed her own plans.

Cath is a good example in my model of someone who was very inexperienced in terms of her training path, but because of her own skills and ability to get the most out of the training environment she was in, her development had accelerated compared to others. Interestingly, in the case she chose to discuss in her interview with me, it was only when she relaxed and was confident of what I was doing that she discussed the case that was of real interest to her- the first case was relatively safe and one she might have chosen to show off her skills. Even in this study interview, her antennae were alert to the interactions with me and the impact that might have on herself!

Although she gained a lot from her learning environment, in fact she was not dependent on it. Even in a particularly bleak job with very apathetic supervisors she both maintained her morale and ability to develop. The external environment she encountered was of less importance compared to others.

Jane

Jane was also a foundation doctor with a very similar level of clinical experience to Cath, and similarly a high performer but with a different approach. In terms of decision making skills experience, Jane was comfortable with routine decision making and was starting to make more complex decisions. She had built up in her mind a number of cases which she compared new patients to, and she reflected on cases and was able to refer to them when seeing similar, new ones. She made some difficult decisions,

sometimes contrary to decisions made by her seniors, but perhaps was less assertive and so did not always discuss what she was doing to avoid possible confrontation.

This was not unsafe, because she had discussed with others or built in safety nets. It did sometimes lead to problems later if the more senior doctor found out, or Jane was sometimes worried about what the supervisor was thinking. This in turn led to some internal distress. When I described “post-script” in the data chapter, I was referring to how people deal with difficult experiences, how they rationalise them and reach a sense of equilibrium or closure. For Jane, sometimes what happened in training relationships or with patients remained with her for some time, with a feeling that she should have done better. Like Cath, she took responsibility for making decisions. Her language, or the ability to make herself clear, did not always work, and sometimes she got cut off when discussing cases. Clearly some of the internal issues were strengths: taking responsibility, her thinking and awareness of situations, but other components held her back.

She did, however, seem to gain from the learning environment in ways that Cath did not (and perhaps did not need to), in particular the affirmation from talking through cases with supervisors and getting the positive feedback. In environments where she encountered engaged supervisors who were willing to discuss cases and feedback, she was able to develop more and improve her skills.

Jane and Cath, at a similar point in training, were developing well in terms of gaining experience in decision making and performing at a high level. Cath’s strengths were much more internal and she was less dependent on the environment she encountered. Jane had some real internal strengths but also some aspects which appeared to hold her back, as a result she seemed more dependent on the learning environment she encountered. In turn, the learning environment she encountered was much more variable whereas Cath’s strong internal enablers meant that variability did not seem to impact on her so much.

The Middle stages of training

Anna, Kate and Freya were all in the middle of their training at a similar point. Anna was perhaps representing the norm in this study, whereas Kate and Freya are at different ends.

Anna

Anna had gained considerable experience in Accident and Emergency (A/E) and through doing night shifts early on where she was forced to make decisions with remote support. She recognised the clinical value for her of that A/E experience of seeing lots of patients, often with straightforward decisions to be made, and getting immediate feedback in terms of investigation results or supervisor input. She was able to compare cases back to previous ones and see similarities and differences. She was starting to get involved in making more complex decisions but did not have significant critical cases that had shaped her experiences or had felt the need to challenge or deviate from any clinical protocols.

In finding herself in roles where her seniors made most of the decisions, one internal aspect that inhibited Anna's development was that she tended to withdraw from decision making in those situations. If she felt that the decision was going to be taken or changed a little later, she stopped making initial decisions, unless urgent. Other colleagues were able to keep learning by either making the decision and waiting to see if the senior review changed it, or by making a "virtual" decision (thinking through clearly the decision making even if not actually making the decision).

Anna recognised a transition in herself from the need to "do" something when dealing with a clinical situation to show patients and other staff that she knew what she was doing. She felt more comfortable creating space, using safety nets and observing situations unfold. She had not encountered particular cases or experiences that had had a major impact on her training, either positive or negative. Likewise from a self-esteem point of view, she had a generally positive view of herself. Where perhaps Anna might benefit from developing further, is in relation to her own thinking and reflections on cases and her training. In comparison to some of her colleagues she took part in clinical conversations where they were taking place but did not initiate them or push herself to seek out training opportunities.

Externally, Anna found herself in some training roles where the clinical supervisors were very hands-on in terms of decision making. This stifled her opportunity to make those decisions. She had not had any particular mentors or role models, she had generally got on with the teams she had worked in. She felt comfortable in

environments where she discussed cases, but as mentioned did not particularly initiate them. Anna really benefitted from supervisors who stretched her and challenged her in her thinking and learning.

Anna, from her interview, had no major issues in terms of her decision making, or the development of it. She was progressing along the process of gaining experience. Her view of herself in relation to her role was overall on the positive side and helped her to work in different clinical environments and develop. However, compared to some of her colleagues she did not get as much out of the training environment as she might, to do this she needed to be more strategic and think about her learning more. For her the educational environment was very important. The more it stretched her, the more it helped her develop. She was clearly developing and gaining experience, acquiring the skills needed, faster than some but not as fast as others. In that regard she represented the middle ground in this study, with no concerns about her development. When she was in a learning environment that provided a high level of support, she accelerated her development with skills to take advantage. Those skills were perhaps not strong enough, though, to overcome a poor learning environment where her development slowed.

Kate

Kate had similar clinical experiences to Anna, and her decision making skills were at a similar level. For Kate a number of the internal challenges were considerable. Some areas were real strengths- her ability to think about cases, awareness of herself and the wider picture, as well as being very conscientious. However, there were major issues holding her back: resilience/ self-esteem, finding her voice with supervisors, taking responsibility of her development and the impact of difficult situations on her. It was hard to disentangle the connection between all of these.

Kate had had one very difficult experience with a supervisor, where a relatively minor incident had led Kate to feel the supervisor was questioning her integrity. That had impacted upon her self-esteem and led to her considering alternative careers. It is hard to know how it was before that episode but it appeared to have some significant subsequent effects. Kate, as with others, was adversely affected by difficult situations in a way that some of her colleagues with greater resilience were not. It led to her questioning herself and she was not easily able to get closure on those experiences. There were a few examples where she avoided approaching supervisors to discuss

specific cases, even though part of her would have liked to. She was not confident enough to articulate her clear views on management plans, and feared they might be changed if she discussed them, not because the plan needed changing but because she was not good enough at articulating the message. Her chosen difficult case was all around whether or not to involve a senior doctor, rather than the case being especially complex. Self-efficacy was a major issue for Kate impacting on her ability to engage with the environment.

Externally, she experienced a range of different learning environments. She had some good training environments where she thrived with good supervisors and liked to be stretched. In the right environment, she had been able to regularly discuss cases and make appropriate decisions with appropriate supervisor input. Kate, perhaps more than any of the other doctors in this study, highlighted some key internal issues that were holding her back. If she was able to develop some of those areas, it felt as though she would have got so much more from her training, and found it more enjoyable. At times she was very unhappy.

Freya

Freya presents a contrast. The case she chose was very interesting because it was very much about managing complexities, in this case social, and managing patients outside protocols. She did this though in a way that built in safety netting and supervisor support. She was the best example among my group of training doctors of someone demonstrating her use of practical wisdom through her descriptions and discussion, and illustrating what might be expected from someone who had “gained experience” in this area. She could clearly see the complexities of situations and the wider issues. She also saw the personal implications of taking measured risks, as well as an awareness of what she gained from being involved in this level of decision making.

Freya was able to take advantage of a number of the internal and external influences to accelerate her development. Internally she had a high level of self-esteem and clarity of her language and communication. That together with well-developed thinking/ problem solving skills gave a high level of ability, and she used those skills to interact well with the training environments she came across. She recognised fully the importance of the experiences, initially very routine decision making, which gave her the grounding to compare new cases against. She also recognised some of the areas that had changed

with her training that had maybe held her back from wiser decision making- lack of knowledge and fear of doing the wrong thing. Self-awareness and thinking about her training and patients were key strengths.

Within the learning environment, Freya was the one who spoke most eloquently about the importance of role models, and could list people who had significantly influenced her. Role models are an interesting area- in my diagrammatical model I have considered them as part of the clinical environment, but thinking about Freya also raises the issue that a training doctor being able to identify a role model is perhaps as important as the role model themselves. An important aspect of her training had been working in environments where there was a lot of discussion and questioning. Freya felt learning early on that there were always choices in how to manage a given situation had been of major significance. A supportive environment where she could ask questions and get plenty of feedback had helped, but she was also able to seek feedback if it did not come automatically.

The latter stages of training

Towards the end of training, trainees had had the opportunity to build up experience in the initial routine decision making and were involved in more complex decision making. The interesting aspect of this group is that they were not all at the same levels of decision making despite more standardised training processes. That is helpful in supporting the argument of the internal and external influences playing a key part in training. I am going to start by thinking about Bob, before finishing with Dave, who perhaps represents the complete model, someone who has most of the influences working in a positive way to accelerate his development.

Bob

Bob was near the end of his training and somebody who was articulating and able to make complex decisions, but not to the same level of complexity as Dave. He had built up through a number of years of training considerable experience of straightforward and then more complex cases with a number of critical cases and situations where he had managed people in an individualised way, off-protocol.

Internally, he had strengths in being able to take responsibility, make decisions, be clear in terms of his language and what he looked for in feedback. He also thought clearly

and took in the wider picture. However, there were issues in relation to resilience/ self-esteem and the impact of situations on him. Bob had a fragile self-confidence and it was easily knocked. There was a fine line between supervisors asking questions to find out what he was thinking/ develop his decision making, and questioning his judgement which he sometimes perceived. He acknowledged that unless his supervisor believed in him, Bob would quickly lose confidence. While he would cope, it would be draining. Similarly, adverse events took a while for Bob to get over. Bob had experienced mixed training placements, with contrasting levels of support and input.

Bob illustrates the importance of the internal influences, and perhaps some concerns about training structures which ideally should help to address some of these issues before completion of training. In his case, his beliefs about himself were fragile and while his career and his skills were developing well, his journey might have been accelerated with them addressed. Like Kate, the training programme and in all likelihood future working life would be much more enjoyable if he was on more of an even keel, and less worried about situations.

Dave

Dave had several key cases that had shaped his own development, and they were often not about the clinical situation, but how to balance the clinical decision making with the individual patient, family and other healthcare professionals. As well as reactivating previous clinical cases in terms of clinical outcomes, he thought about the implications of the way those decisions had been made as well as the actual decisions. He recognised that the way decisions are reached has implications as well for the wider team, in terms of how they approach situations the next time and whether they involve you, how safe they feel to think, discuss and take risks etc. He also prioritised teaching the more junior members of his team how to approach decision making. In my diagram, Dave is the closest to demonstrating that he has reached the point of having the skills of practical wisdom.

In thinking about the internal/ external influences, Dave highlighted the importance of the learning environments he had encountered. There had been a volume of exposure to cases throughout training, but it had also been backed up by working with supervisors who would constantly be discussing his ideas and asking questions about the way he managed situations. He had initially worked largely in the same place which helped to

build relationships. The supervisors also allowed Dave to make decisions, and this led to a virtuous circle of being given greater freedom. He always felt stretched but within what he was capable of, in a very supportive environment. The organisation Dave worked for put a huge emphasis on training, for example by timing ward rounds to allow feedback to be given to night staff, and focussed on the style of feedback. After that initial training, Dave worked in a number of different locations which made this aspect more challenging, but perhaps was less important now that the foundations had been built.

Dave also had a number of internal strengths. He had developed his language skills so seemed to be clear in communicating with others what the purpose of the communication was, as he was in the interview. He took responsibility for both making decisions and discussing cases with others. He had high levels of thinking strategies and an awareness of the bigger picture and made decisions based on that. Interestingly, Dave had not obviously experienced any major setbacks or situations that had had an adverse impact on him. I was not certain whether that was because he had a level of resilience that those types of situations would not have impacted on him, or genuinely because of his other skills he tended to not find himself in difficult situations.

Dave perhaps illustrates the full model, having both very strong internal influences and powerful external influences which combined with experience have led to accelerated development of his decision making ability, and perhaps the most highly developed practical wisdom of the people interviewed.

6.9 The training doctors and the overall model

One of the dangers of trying to represent a complex situation in a diagrammatic model is that it may oversimplify the situation. In looking at some of my subject participants in more detail, I have tried to understand and describe the different trajectories that they are following. This study has not looked specifically at analysing designs of the clinical thinking pathway, but at how doctors develop practical wisdom. Of the group of doctors looked at Jane and Anna represent what I would consider to be the “norm”: through going through the process of “gaining experience” in their training rotations, most doctors will acquire increasingly complex decision making skills. Most will, on completion of training, be able to deal with “complexity” to a satisfactory level.

The diagram below represents Jane and Anna with a number of internal strengths and weaknesses which means that the internal influences overall are neither accelerating or slowing down the process. The external influences become more relevant, and their experiences were mixed. When placed in good external cultures, their development will accelerate but this is balanced by times when they struggle in less good training environments. In terms of decision making, it is not as developed as others for the same stage of training. The internal/ external influences overall have not served to accelerate their build-up of experience over the course of her training. The two doctors mentioned have got a number of different strengths and weaknesses which enable them to progress in their training. Assuming they have reasonable training placements and nothing unexpected happens, they should reach a satisfactory end point.

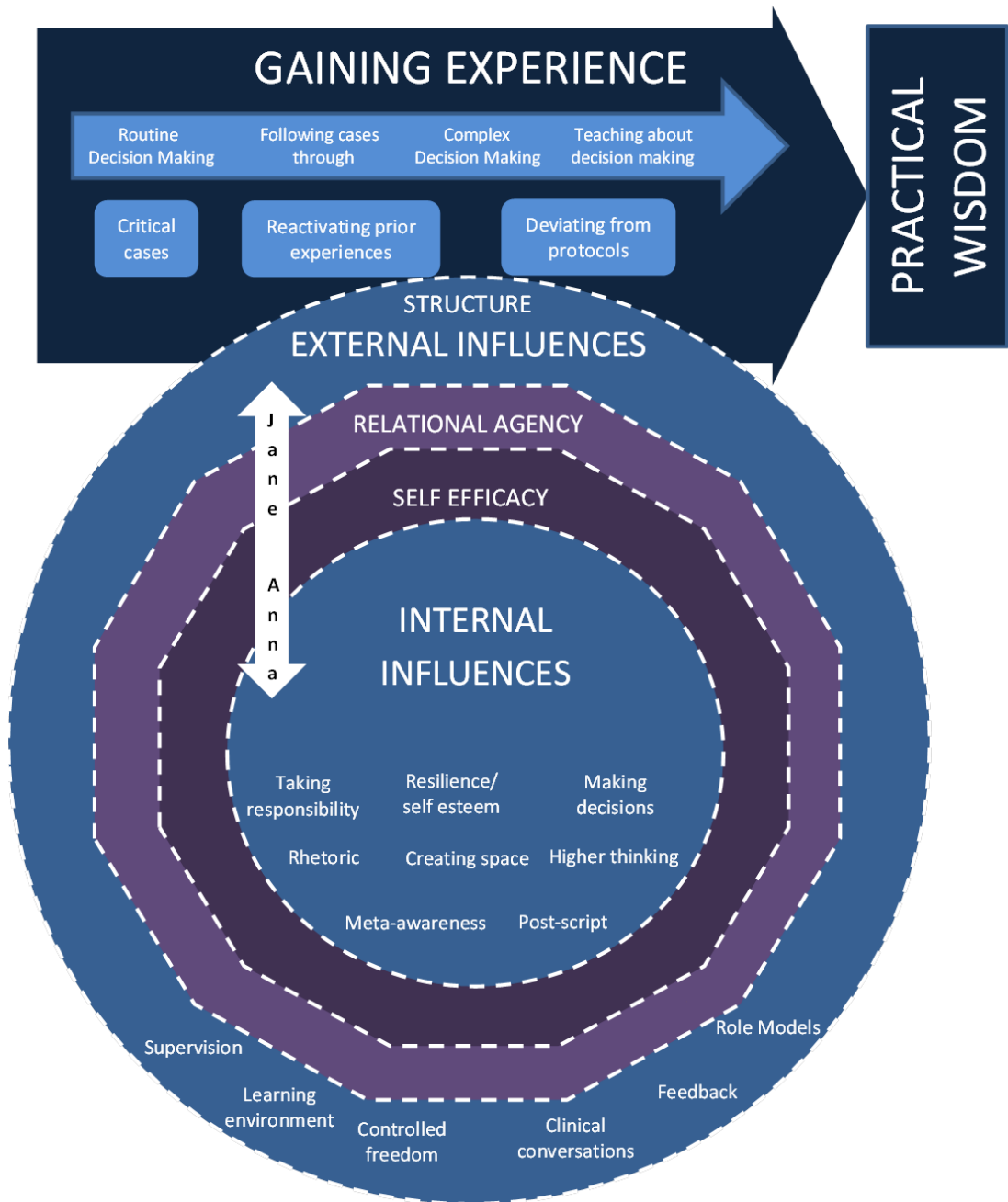


Figure 6.3 Anna and Jane

Dave, Cath and Freya are important to this study because they represent doctors who appear to be excelling in their decision making, even at an early point in their experience and are operating at an advanced stage in their decision making. All three with slightly different internal influences demonstrate the real value of high self-efficacy and relational agency. All three of them show high levels of self-efficacy which has significantly accelerated their development- they are the most advanced in their decision making skills. Dave and Freya also are able to perhaps derive more from their training environment than Cath which accelerated them even further, depicted by thicker relational agency arrows:

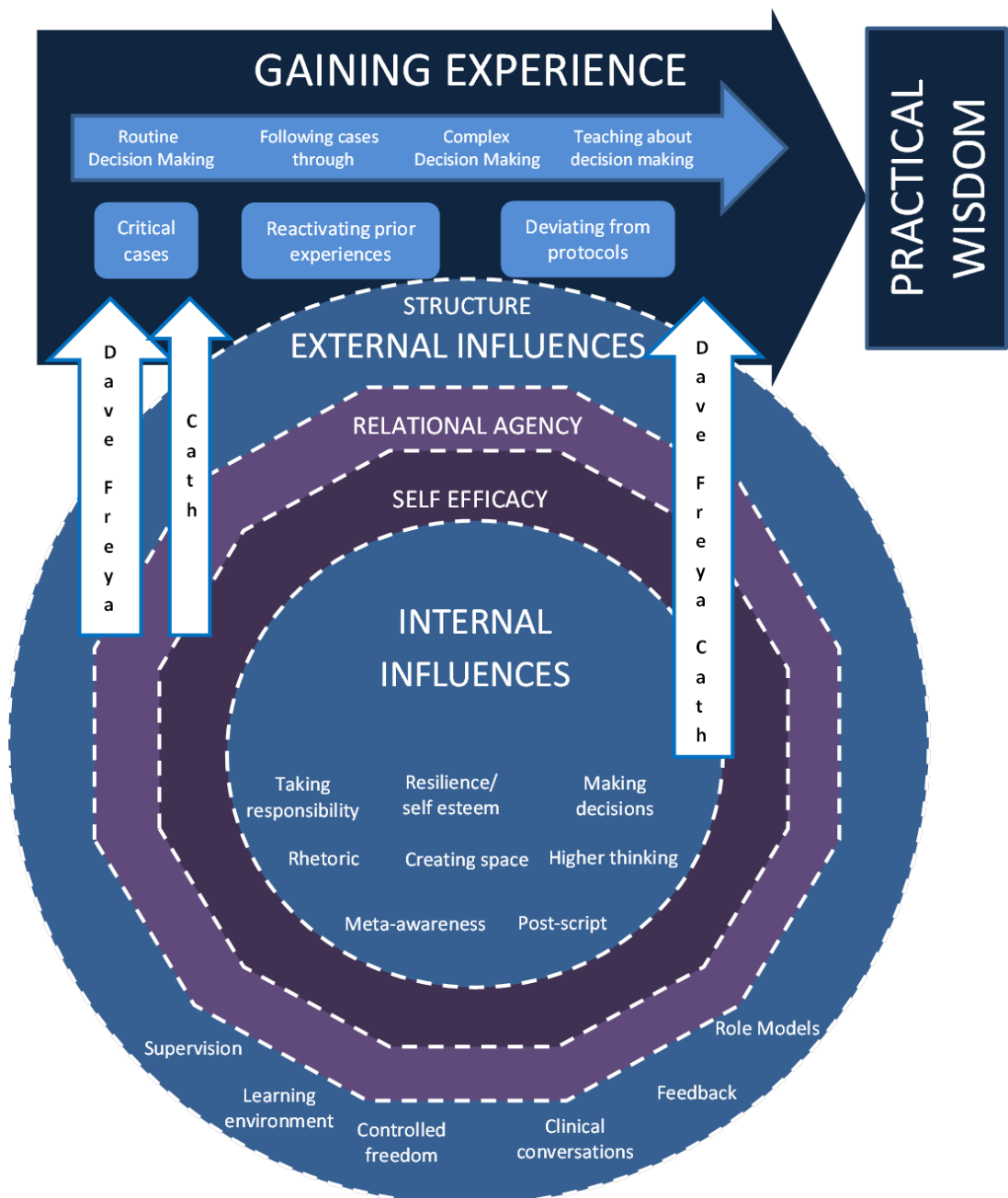


Figure 6.4 Cath, Dave and Freya

The model helps to show why the three of them are ahead of the others. In turn that enables educators to think about what aspects of Dave, Cath and Freya's skills could be utilised in training others. One hypothesis from this piece of work is that if Jane and Anna had an educational initiative aimed at their self-efficacy and how to get more out of their clinical environments, they might be able to accelerate their own development.

In a different way, Kate and to a lesser extent, Bob are important cases. They show through the model some real concerns in terms of their internal influences. These negatively impact on their self-efficacy. In Kate the internal inhibiting influences are stronger perhaps because Bob was more self-aware of the dangers of avoiding situations, depicted in red. In terms of the interactions within the clinical environment I have portrayed these as having no overall impact on accelerating development. This means that in good environments their development will be accelerated, but balanced against their experiences in less supportive environments.

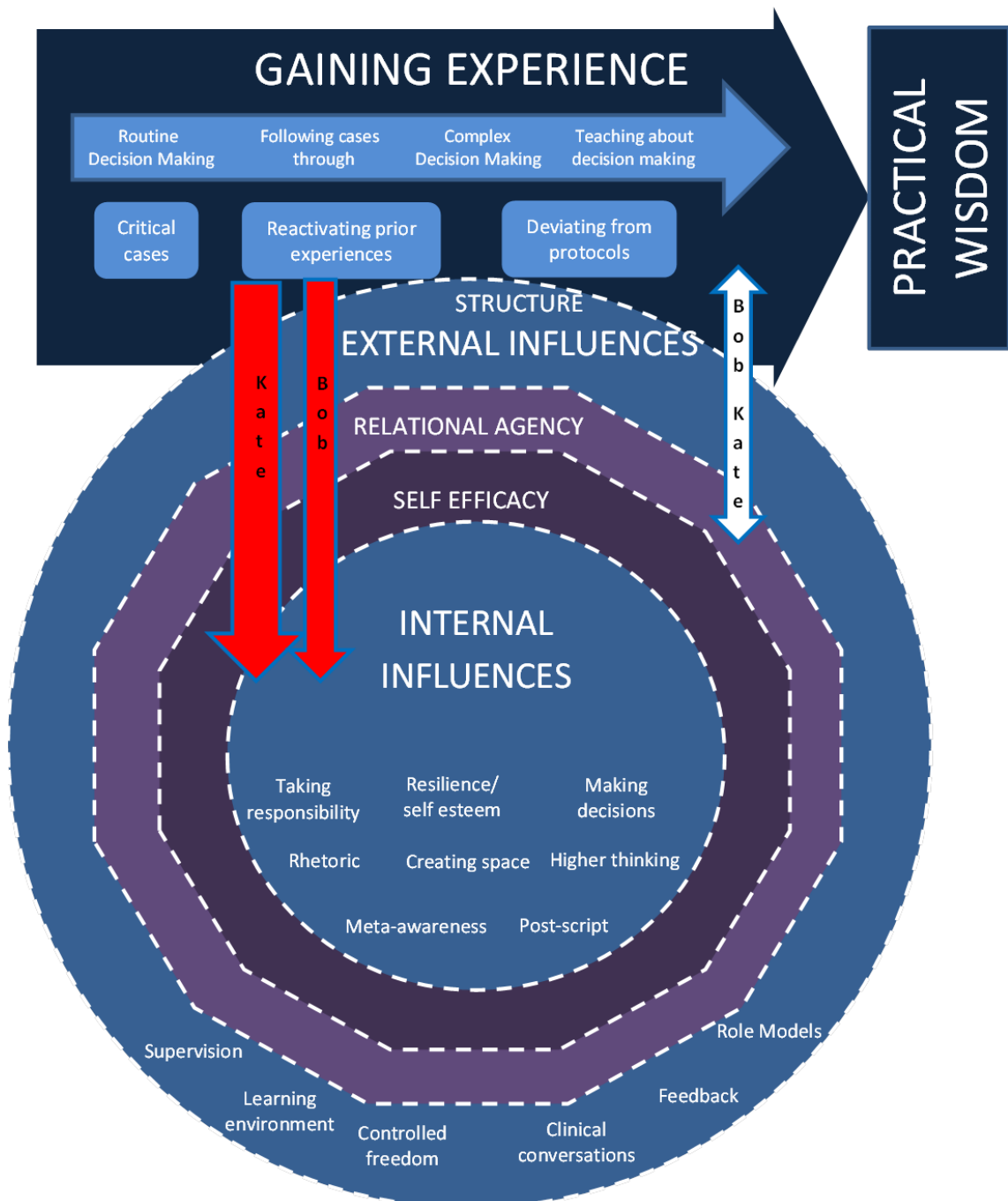


Figure 6.5 Bob and Kate

Both of them are relatively high performers, but the low levels of self-efficacy, especially for Kate, mean that the high performance takes a lot of energy. The danger in their careers is that if those negative influences continue, they may not be able to keep putting in the level of energy required and so start to perform less well or experience significant stress. The hypothesis with Kate and Bob would be that by trying to intervene to improve their self-efficacy, their development may improve and perhaps more importantly their contentment helping their future careers.

The diagram does not mean that they were not making good progress, but that the negative influences were significant and given their other skills, they could have been doing even better. Having considered the doctors and how my findings tie together, the limitations of the study will be considered.

6.10 Limitations of this study

One of the key challenges of this study is the difficult nature of the subject matter. The area being investigated, the process between “the right thing to do generally” and “the best thing to do in this specific case” focussing on practical wisdom, is hard to uncover. The overlap of different elements of clinical thinking are hard to separate out in practice, especially when it comes to data collection. Much of the process is tacit and mechanisms were used to try to illuminate this aspect, “the invisibles” through focussing initially on a specific case, based on previous work in this area. Nevertheless the data will have blind spots as a result.

The rationale and potential issues with the method chosen and data analysis are discussed fully in the methodology section. Here, I will highlight that in understanding the process of developing practical wisdom, the data is based on the narrative that the participants told me, with my questioning, and my analysis using both research skills and subject knowledge. By the nature of the approach, the findings are therefore an interpretation, and there are other potential interpretations, in keeping with my research stance. Because of the measures taken to ensure methodological robustness, the study and data is reproducible. The generalizability is more challenging because of the potential variables of the small group, the areas of medical training they were picked from, and the type of research carried out. It will be for further research to verify my findings, particularly by triangulating the data with the views of supervisors. Nevertheless the findings are consistent with other work around professional development, particularly in terms of gaining experience and some of the potential interventions. The originality of my study is in understanding the factors that can accelerate the development of practical wisdom, how they can be considered in terms of internal and external influences and interventions that could help this process.

Chapter 7. Implications of my findings for training

My interest in this subject comes from a lifelong interest in the way people make difficult decisions- what makes someone decide to choose a certain course of action in a particular situation, but do something different in another related incident. Schon (1983) used the phrase “swampy lowlands” to describe the complexities and uncertainties of the decisions professionals have to make, often with no clear answers. In the background literature, clinical thinking models were looked at and I described the area of clinical thinking that I would focus on, practical wisdom.

One of the challenges throughout the study has been both exploring and understanding “practical wisdom”. I have focussed on trying to explore doctors choosing from the right decision generally (without being context specific) to the correct decision in particular circumstances. This has been done through investigating difficult, challenging decision making and trying to make the thinking and influences as explicit as possible. The data helps illuminate the ways in which doctors in training may approach difficult decisions. This has been developed into a model that conceptualises the process of developing practical wisdom.

In this chapter, I will highlight some of the key interventions that have emerged from my data as possible ways of improving the difficult decision making of doctors, enhancing their practical wisdom. These include interventions targeted at improving:

Internal influences:

- self-efficacy among training doctors
- doctors’ skills as self-regulated learners, co-ordinating their own learning and getting the most out of the situation
- doctors’ “rhetoric”, the language they use to communicate
- resilience
- agency

External influences:

- management of transitions between posts
- rotation structure to allow for progressive independence
- the emphasis on quality rather than simply competence

- opportunities for informal learning and discussions- time and space
- the culture of clinical environments- open and supportive, stretching individuals and encouraging discussion
- the training of supervisors as co-configurators

This chapter will focus on how we might impact upon the complex decision making skills of training doctor, leading to the development of practical wisdom. This will be considered in line with my data, by thinking about the internal and external influences. Before doing this I will address some issues within medical training that impact on development in this area.

7.1 Medical training and tensions in the clinical workplace

In considering the structure that medical training takes place in, this section will briefly focus on recent changes in medical education and how they relate to my findings. Medical training has evolved over centuries with a number of traditions, some of which have been discarded, others have evolved. With every change, areas have strengthened but sometimes important aspects of training have been lost, often without realising it. In this section, I will identify some of those key trends and consider areas of training that need further development to support the needs of doctors from the results of my study.

For many current senior doctors, their professional development was to a large part based on progressively becoming more independent in the delivery of patient care with decreasing supervision (Kilminster and Jolly, 2000) alongside experiencing independent clinical practice for extensive periods out of hours, where they were largely responsible for managing patients (Kennedy, 2009b). This required training doctors to function independently and make independent decisions (Rothstein, 1987). By seeing the consequences of actions, decision making evolved. Patient safety relied upon training doctors recognising a situation that they could not handle alone and calling for help.

There were flaws with the traditional medical training model. Long hours of training and inadequate supervision sometimes undermined the process. While the extensive experience gained through this process must help the ability to work independently for most doctors, it is not certain that all doctors will have developed these skills by seeing and acting on more cases. This experience must be moderated by supervisors and the

doctors' own skills. This form of apprenticeship model worked exceptionally well where good training doctors worked with good supervisors. If one of the two performed at a high level, they may have compensated for each other, but this model became especially problematic where either the supervisor or training doctor were poor. The extensive periods of time with a poor supervisor did not allow for moderation of practice in the way that current training may allow.

Patient safety is also a major concern of this type of model. If training doctors are left on their own to make decisions, the risks of them making decisions outside their ability is significant. We know that more factors than clinical need influence training doctors' decisions to seek help, trainee issues such as their reputation, independence and credibility, as well supervisor factors such as availability and approachability (Stewart, 2007, Kennedy, 2009a).

Alongside these key issues has been the increasing specialisation of medicine over decades (Goldbloom, 1978). This means that whereas previously spending a long period of time with a team may have led to a good general experience, training doctors need to work with several teams to get the same breadth of exposure. Employment legislation in relation to the hours that junior doctors work has reduced the amount of time spent in clinical settings (Pickersgill, 2001). As a result introducing shift patterns has introduced tiers of doctors out of hours, which impacts on independent decision making, as well as changing continuity.

All of these challenges have led to a number of significant trends in medical training, perhaps best demonstrated in the UK by "Modernising Medical Careers" (DoH, 2004), a transformation in the way doctors train with the following key aspects:

- A switch from apprentice based learning to shorter clinical placements and, in general, shorter lengths of overall training
- Outcome based learning with defined competencies which are assessed

There are strengths and weaknesses to the current training structure in relation to my data. Shorter placements with a greater breadth fit with the model I have described in the initial stages of "gaining experience", assuming that the placements are in "appropriate" settings providing a volume of routine cases moving to greater continuity as experience starts to build up. The advantages of seeing different settings and different

ways of working are significant to showing doctors different ways of managing situations. As doctors progress, the rotations at a more senior level tend to be longer which has the potential to allow the greater continuity needed to allow more complex thinking and decision making to occur. In my data, where the focus is mainly on service delivery and not training, there is significant risk that training doctors are not with individual supervisors long enough to develop the depth of experience and discussion required. For this transition to happen in types of decision making from relatively simple to more complex, there also needs to be careful management of shift patterns and the number of teams/ individuals involved in training placements.

Perhaps of greater concern to this study is the growing involvement in medical education of regulators and the resultant concentration in medical training on outcomes and specific competencies which can be measured. For an area like difficult decision making and practical wisdom, it is very hard to define a specific competency or outcome that is easy to measure. The outcomes and assessment tools are evolving but are more clearly designed for testing more straightforward learning outcomes. There is a risk in this situation that complex areas simply do not get assessed, echoing the experiences in assessment of my participants.

Additionally in trying to achieve minimum standards, there is limited scope in encouraging excellence which is crucial in this subject area. Training doctors in my findings needed to be able to contemplate taking risks in their decision making, and discussing cases which might expose deficiencies in their development. They also needed to be stretched by supervisors. If the emphasis in the clinical environment is on assessing whether doctors are safe and reaching minimum standards there is little to encourage discussion about complex areas especially where there is uncertainty.

Fish and de Cossart (2007) raise concerns about modern medical training pertinent to this project. In particular they suggest that training may focus on measuring only those outcomes that are straightforward to measure and concentrate only on visible behaviours rather than areas such as complex decision making and judgement. They also argue that assessment that focuses on objectivity and outcomes is much less about developing individuals and stretching them.

My data around assessment and feedback suggests that, and is backed by other studies, that in dealing with assessments, doctors may be dishonest when discussing their management decisions (Sinclair, 1997), try to put on a show of competence (Lingard *et al.*, 2003) or alter their presentations based on their perception of what they think the supervisor wants to hear (Sommers *et al.*, 1994). Many of these are entirely reasonable strategies to demonstrate summative competencies, but get in the way of enhancing clinical judgement. In that sense, the assessment process is at risk of reducing the importance of professional skills such as thinking and professional judgement because of no clear means of assessing those skills.

A significant and growing tension in the clinical environment is around managing clinical risk, and provision of care. There is a national drive that patients achieve better outcomes when there is greater senior input, alongside greater supervision of training doctors (Academy of Medical Royal Colleges, 2007). As a result more senior presence is occurring in hospital settings where the majority of training doctors are based. Used in the right way, this can be helpful for training doctors, but there is a significant risk that senior clinicians will make decisions missing out the important step of training doctors developing independent decision making with safety nets. The clinical structure sets up a default of earlier senior decision making which requires motivated teams to make sure the training is happening. For the development of clinical expertise, supervision needs to be close enough to provide informative feedback while allowing enough independence to challenge a trainee's abilities (Kennedy *et al.*, 2005). This evolving structure of 24/7 senior input will almost certainly lead to better patient outcomes but at significant potential risk of worsening long term outcomes if as a result training doctors develop less skill in independent decision making.

The final tension that I propose to training doctors developing these skills is the growth in providers of healthcare. Conventionally most training doctors in the UK either worked in NHS GP or secondary care settings where all care was delivered. As clinical services start to get delivered by any qualified provider, typically those services which are more straightforward are being delivered by providers who are not involved in medical training. As has been shown by the conceptual model, the early stages of training require exposure to frequent, straightforward cases. If those cases are less accessible to training doctors, the important initial steps of gaining experience are lost and we risk trying to develop practical wisdom without solid foundations.

The purpose of this section is not to be alarmist about the state of medical training. Evolution happens and there is much strength to medical training, but some trends threaten the development of the skills this study is looking at. In highlighting this, the evidence from participants, is that individuals can thrive with the right skill-sets and experiences. In articulating these through the model, and considering the implications, I am aiming to highlight ways in which current training can be enriched.

7.2 Internal influences- developing training doctors as self-regulated learners

From an educational point of view, the challenge posed is how people develop practical wisdom, and most importantly how this can be enhanced. If I came in to this subject with any pre-conceived ideas, it was that the focus of the study would be the clinical environment that training doctors entered and that manipulation of the environment would be the most important aspect in accelerating development in decision making skills. That remains true and my data supports the view that the clinical environment can be improved significantly to improve individual development.

However, my own thinking has evolved significantly in understanding better the role of internal factors and how the doctors engage with their environment. Doctors will always be moving in and out of different environments, some with better opportunities than others. In this study, the difference in those training doctors who were able to accelerate their development was as much about what they as individuals were able to extract from the opportunities presented, as the learning environments they encountered. In some cases, the learning opportunities did not seem great, but by their own abilities, some of the training doctors were able to excel in these environments where others floundered. Focussing on improving the skills of doctors to gain the most out of the clinical environment based is likely from my data to yield significant benefits.

As current medical training is organised with shorter posts as part of a rotation, the training doctor has the key co-ordinating role in managing their own learning and what they get from the opportunities presented to them as they rotate through posts. This is right in adult education, but is different to the old model of apprentice/ expert and requires the learner to have a different set of skills. Some of the doctors I encountered excelled in this role and were able to navigate their way through good and bad training environments, thriving and accelerating their development. In turn, there are clearly key elements of the learning environment that enable trainees to excel.

Lifelong learning is a key concept in education, but perhaps one in medical education that has not had enough attention paid to what it means and particularly how it is achieved. For me, a crucial understanding from this piece of work is the reality that training doctors are at very different stages in their ability to take advantage of the opportunities available. This may not have mattered so much in previous training models with long opportunities to gain experience in an apprenticeship model, but it is important now. The evolution of this thesis has seen greater emphasis placed on the need to develop those skills in the training doctors, and perhaps earlier than that. This can be through professional development type programmes, especially at key transition points.

A key component of my findings is doctors developing their skills at communicating their message. My findings in this area are supported by other work that shows that strategies such as the formulation of cases, the timing of questions, having a clear plan to discuss and targeting questions at different members of the team all help to address patient safety while enhancing credibility (Kennedy, 2009a). All of these skills can be developed. In my data, those doctors who could clearly communicate their ideas and purpose of interactions with others were able to get the most out of their encounters. This included being able to ask for help, as a key mechanism in refining their skills.

In my research, training doctors taking responsibility for their own training and forcing themselves to make decisions was an important component for development, coupled with their resilience and ability to deal with the aftermath of clinical situations. Specifically in terms of complex decision making this was also backed up by the ability to think in more holistic ways, take in the whole picture and create time for themselves. Some of these cognitive skills can be worked on through problem solving activities and case discussion.

One of the aspects of the study I found disturbing was just how traumatic individual experiences were for some of the training doctors, and the powerful negative impact it had on some of them. Just as powerful were the positive experiences, but it felt as though for some of them training experiences (or their perception of them) had been sufficiently damaging to impact on their future behaviour. For those individuals their levels of self-efficacy were low. We know that self-efficacy is strongly related to performance; in a meta-analysis it was second only to mental ability (Judge and Bono,

2001). Mental ability is hard to adjust, whereas self-efficacy can improve. There are a number of scales designed to measure people's self-efficacy and assess whether interventions improve the scores. Bandura believed that interventions can be targeted at four domains of self-efficacy (Bandura, 1997):

- personal accomplishments lead to expected future good outcomes (personal mastery experiences)
- observing others accomplishments can lead to expected good outcomes for oneself (vicarious mastery experiences)
- verbal persuasion by others of a good outcome
- reduction or re-interpretation of negative physiological or affective states eg. low mood or nerves

A number of studies have demonstrated successful interventions to improve self-efficacy in specific areas. These interventions may be more successful in people with high levels of emotional intelligence, who are more likely to be open to change (Fitzgerald and Shutte, 2010). The development of self-efficacy programmes among our medical students and training doctors would need to be evaluated, but my findings suggest that any interventions that can improve self-efficacy will yield significant benefits in terms of performance, as well as general well-being. It may be particularly important to target this at doctors with low self-efficacy or those who are failing to progress.

For training doctors with low self-efficacy, the effect can be significant and impacts on their ability to interact successfully in the environment in which they operate. The next area discussed will be around relational agency which is of fundamental importance especially where doctors are rotating more and spending less time with individual teams or trainers. My data particularly emphasises the importance of the individual within these team structures. Relational agency is more focussed around how individuals interact within the working environment than on the organisation of the system. Edwards and Wiseman (2005) coined the phrase 'knowing how to know who' to describe the process of navigating around teams and utilising individual strengths and those of the team.

Edwards (2005) argues that "professional learning should not be simply a matter of induction into established practices; though induction into values and key skills is

important. It also needs to include a capacity for interpreting and approaching problems, for contesting interpretations, for reading the environment, for drawing on the resources there, for being a resource for others, for focusing on the core objects of the professions.”

Professionalism or professional development in medical training could consider a variation on team working to be more focussed in this area. Being able to build collaborative relationships was a key finding for individual development in my data. Educators need to recognise that those trainees who have greater ability to position themselves alongside others developed more effectively, especially when it comes to decision making.

By emphasising training doctors as self-regulated learners, we can attempt to enable them to have the tools to navigate through their medical training and get the most out of it. That would have made a significant difference to some of my participants. People with high self-efficacy are usually self-regulated learners (Pintrich and Schunk, 2002). Self-regulated learning is about individuals taking control of their own learning and behaviours through monitoring, directing and regulating action towards the goals of information acquisition, expanding expertise and self-improvement (Paris & Paris, 2001). This can only be done with high levels of self-efficacy and relational agency. Self-regulated learners were evident in my study by their ability to manage their training and get the most from it. They believe that opportunities to take on challenging tasks, practice their learning, develop a deep understanding of subject matter, and exert effort will give rise to academic success (Perry, Phillips and Hutchinson, 2006). In contrast, there were examples in my study of training doctors who were shaped by events, rather than being able to take control of their situation.

The important aspect of the internal issues covered in this section is that they can all be improved with appropriately targeted training.

7.3 Situated learning- enhancing the clinical learning environment

The impression that training doctors make in their clinical team seems to be important. Kilminster *et al.* (2011) found that in a new clinical environment, training doctors were judged to their level of ability soon after starting, and this impacted on the support they were given and what they were asked to do. Those who made a favourable impression were likely to be given more opportunities to do more, and given the support they

required. The difficulty is that a “favourable” impression may differ between teams and lead to some challenges in trying to appear competent. Alongside approachability of supervisors, a key element in deciding whether to ask a supervisor for help seems to be the likely impact of asking for help on the training doctor’s clinical credibility (Kennedy *et al.*, 2009a) or on perceptions of their competence (Stewart, 2007). Recognising the significance of starting new placements can help training settings manage these “critically intense learning periods” (Kilminster et al, 2010). Clearly the training doctor plays a key role in this, but the ability of the training setting to address this contributes to, or inhibits the performance of doctors. Training doctors need to develop a balance between more independent practice and patient safety without undermining their own credibility.

The importance of moving through a continuum from routine decision making through to complex decision making, managing critical cases and individualising care has been highlighted in my study and in other work. Stewart (2008) describes the importance of “controlled freedom” allowing training doctors a sense of responsibility because the decisions and actions being taken by them mattered, and they were responsible for them. This needs to be underpinned by the knowledge that someone more senior can be contacted if needed. “Progressive independence” incorporates a similar idea of working increasingly independently as skills improve (Kennedy *et al.*, 2005) though the authors note a potential tension between changes in training that emphasise safety and efficiency with a risk long term of producing clinicians who cannot work independently. Increasing senior presence needs to be balanced by not stifling the developments of training doctors.

In designing training programmes, attention needs to be given to the stage of training. In the early years a volume of experience with instant feedback is helpful, whereas later having continuity of both patient care and supervision helps to develop more complex decision making. Incorporating complex decision making within the assessment process will also help to prioritise this area, though the focus must be on formative assessment and building on people’s skills by encouraging the exploration of some of the thinking behind decisions.

Medical training has evolved significantly over the last 50 years from principally an apprenticeship-type model, dependent on long term relationships between trainer and

trainee. In that model, training doctors clearly were able to build up experience over time and the trainer was able to develop and stretch their trainee. There were significant disadvantages to that system- being with a poor trainer, lack of transparency or standardisation of training, questions of fairness etc. We now have a system of rotations where training doctors spend much shorter periods of time with individual trainers, often on shifts. That together with a shift towards outcomes based education has led training to focus on breadth of experience and reaching a minimum standard so doctors are safe. The challenge with current training is that while patients need doctors who have reached a minimum standard and have broader training, they also need people who are excellent and can deal with the most difficult of challenges. In a competency based curriculum, that is a challenge unless training doctors are motivated to pursue excellence, rather than simply achieving what is needed to meet their assessments. A greater emphasis on aspiring to excellence would improve the development of complex decision making significantly.

The importance of regular clinical conversations to enable case discussion has been emphasised, both for more routine decision making and when it is difficult. Explicitly setting out a shared understanding of the types of situation that warrant contacting a supervisor, and feeding back on how training doctors perform in this area of practice can help (Kennedy *et al.*, 2009a). Increasing the number of opportunities for face to face contact between trainees and supervisors promotes timely case discussion- having to phone a supervisor raises the stakes. This needs to include out of hours working.

In looking at doctors switching between posts, Kilminster *et al.* (2011) found a strong linkage between individual factors and organisational practices, activities and cultures in looking at the performance of training doctors in new roles. Clinical environments need to have training as core to their philosophy, intertwined so that it is not seen as an add on. This study highlights teams able to make feedback and opportunities for greater trainee independence part of everyday working. That should be the norm. Another key factor that came out of the data was the importance of peers and the education and support they offer. Some of the informal opportunities for peer support are eroded through shift working, changes in junior doctor accommodation etc. but organisations can build in or facilitate setting up peer networks, informal times and spaces to allow this to happen.

Progressive trainee independence is supported by the idea of legitimate peripheral participation, a concept explored when discussing “Communities of practice” where new starters engage in straightforward activities while familiarising themselves with the community before taking on increasingly more responsibility (Lave and Wenger, 1991). This can put pressure on them to behave in a way that they feel they should behave, rather than how they genuinely feel in order to become a full member of the community. Eraut (2007) highlighted the importance of a learning environment providing appropriate stimulus and feedback, avoiding people being overstretched- in his study he found that some staff were over-challenged which was detrimental to their confidence. This resonates with my data around the nature of supervision. The level of challenge needs to be stimulating and stretching, but not unachievable, consistent with idea of learning within the “zone of proximal development”, activities that learners cannot do on their own but can with guidance (Vygotsky, 1978).

The nature of supervision is important, being approachable, accessible, ability to articulate thinking, creating a climate of safety and openness, and flexibility seemed to be key traits. Developing the role of supervision into more of a coaching role, supporting training doctors to develop themselves is likely to be crucial as training evolves. Reid (2015) considers the importance of “co-configuration” where trainers act as agents of co-configuration, developing expertise in interpreting the curriculum, brokering the relationships learners need to access specialist knowledge and support, and tailoring learning to the needs of the learner.

Ironically given the fact that the very name “doctor” derived from a Latin word meaning “to teach”, greater attention needs to be given to training supervisors. There is currently a great imbalance between the training and assessment required to achieve clinical competence and working independently, and that required of supervisors. Most hospital doctors can become supervisors with very little evidence to support their ability to do the role. Given that the consequences of poor training are huge, this needs addressing. In the clinical environment a number of factors can be improved to enable the training doctors to encounter an environment which supports and accelerated their development.

In this section, I have tried to highlight some of the key interventions that have emerged from my data as possible ways of improving the difficult decision making of doctors, enhancing their practical wisdom. In doing so, the importance of aligning the individual

doctor and the clinical learning environment with the same goals is of crucial importance. This means for example having an assessment process consistent with the desired curriculum, reflected in the clinical setting, which in turn fits with the aspirations of the individual doctor. Educational focus needs to be on both improving internal individual elements alongside the external clinical environment with particular focus on the interface between the two (self-efficacy, agency and structure).

7.4 Post-script

Since carrying out the data analysis, and developing my understanding of this process, I have tried to apply the model to my work with undergraduate students and training doctors. This has been done in two ways: as an initial “diagnostic” process when people have joined my team to provide some structure to where there areas of strength lie and where there may be scope for development. This has then led to a second focus, of trying to tailor the learning environment that I help shape to where they are, as well as trying to enhance their own tools to take advantage of what is on offer.

Where this has been most helpful is in trying to break down aspects of learning and training into manageable components. Sometimes in short rotations, as a supervisor there is a tendency to make quick assessments of trainee’s abilities and sometimes be overwhelmed if the trainee appears to be struggling or sit back if they are doing well. By starting to break this down into smaller components, particularly with a struggling trainee, I have been able to look at very specific areas that are hindering development and tackle those in a more manageable way.

For example, one of my trainees had great difficulty in his first few weeks in individualising key end of life decisions, making very black and white choices. It felt as though there was a massive amount of work to be done and the temptation in the short rotation was to avoid addressing something that seemed huge. By looking at some of his internal components of decision making, as well as what we were delivering in the learning environment, we focussed on much more practical goals than the difficult decision making. For him, although he came across as being very self-confident, in fact he was not very confident about his ability and his communication skills. This though was coupled with a strong sense of responsibility to make decisions, and he worried a lot about them afterwards. That would not have been my initial superficial assessment of him. In turn, our learning environment was not providing the framework he needed in

terms of feedback and case discussion because of our mis-perception of him. By focussing less on the decision making and more on his “rhetoric” and involving others, with the team encouraging more rounded discussions, we made significant progress. Because of his other strengths, with improvements in those key areas, the decision making followed fairly naturally. From him being potentially written off, in fact he has been a very impressive trainee by harnessing his own resources and getting the learning environment to adapt to those.

I have not yet shown the model to my trainees but that would be an obvious next step to test it out further and see if they find it helpful to use in planning their own training.

Chapter 8. Conclusions

The aim of this study was:

-To understand how training doctors develop practical wisdom

The objectives of the study were:

-To investigate training doctors' approaches to difficult decision making

-To understand and describe the influences on the development of these skills (difficult decision making)

-To identify potential interventions that may help develop these skills

This thesis started by looking at the literature about clinical thinking and professional development, setting the scene for my research investigating the development of practical wisdom among training doctors. The study has looked at this through investigating complex decision making among doctors in training, through the use of qualitative interviews and data analysis. Consideration has been given to the practical findings presented. There are a number of outcomes to this work:

-I propose a model generated from my data that describes an overarching process called "gaining experience" which all training doctors go through as they develop "practical wisdom". Much of this takes place in a continuum.

-This process can be accelerated or held back by the interaction of key internal and external influences.

-There are three key moderating factors that are dynamic and determine the overall impact of the internal and external influences on the development of practical wisdom: self-efficacy, agency (relational) and structure.

-Self-efficacy and relational agency are key components in accelerating development of practical wisdom. Both self-efficacy and relational agency can be improved and this may lead to greater performance and satisfaction. Neither are areas that have been significantly researched in clinical training. Additionally interventions aimed at developing doctors as self-regulated learners, their rhetoric and resilience have been identified as important.

-The structure, the clinical learning environment, can be improved through multiple elements that impact on the quality of the environment. These include the structure of rotations, the management of transitions, enhancing informal learning opportunities, the learning culture of the clinical team, the quality of supervisors and increased emphasis on quality in training.

The focus of this study has been on understanding how doctors develop skills in difficult decision making, leading to practical wisdom. The findings resonate with much of the literature on professional development. The research adds to the literature through understanding the factors that can accelerate the development of practical wisdom, how they can be considered in terms of internal and external influences and potential interventions that could help this process. The model developed may be useful in considering the interaction of the individual and the learning environment in other settings, and testing out some of the interventions identified to accelerate development.

Appendix 1. Literature search

Research papers were identified through the following databases: CINAHL, MEDLINE, ERIC and The British Education Index, using the following terms:

SUBJECT HEADINGS	KEY WORDS
Decision Making	Practical wisdom
Judgement	Decision making
Ethics	Complex decision making
Clinical decision making	Phronesis
Medical practice	Professional development
Clinical competence	Professionalism
Professional development	Medical training
Medical education	
Graduate medical education	

Appendix 2. Research Ethics Committee Approval Letter

Newcastle & North Tyneside 1 Research Ethics Committee

TEDCO Business Centre
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NE32 3DT

Telephone: 0191 428 3564
Facsimile: 0191 428 3432

09 November 2010

Dr Paul Paes
Palliative Care Unit
North Tyneside General Hospital
North Shields
NE29 8NH

Dear Dr Paes

Full title of study: A study to gain an understanding of the role that case discussion plays in the development of clinical judgement among training doctors

REC reference number: 10/H0906/66

Thank you for your letter of 8 November 2010. I can confirm the REC has received the documents listed below as evidence of compliance with the approval conditions detailed in our letter dated 19 October 2010. Please note these documents are for information only and have not been reviewed by the committee.

Documents received

The documents received were as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>	
Response to Request for Further Information	Paul Paes	08 November 2010	
Participant Information Sheet: Information About the Research: Case Discussion	Version 2.0	01 November 2010	
Participant Information Sheet: Information About the Research: Interview	Version 2.0	01 November 2010	

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

10/H0906/66	Please quote this number on all correspondence
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Yours sincerely

Miss Laura Kirkbride
Committee Co-ordinator
E-mail: laura.kirkbride@sotw.nhs.uk

Appendix 3. Interview framework

-In this interview, I want to focus on a recent case which you have found particularly challenging, because once you had diagnosed what the problem was, there were several ways to manage the situation. In particular, it would be helpful to consider a case where you had to make a decision between actively treating a problem, or observing for a time/ not treating the problem.

-First of all, can you describe the case?

-What were you thinking? Feeling? What did you do or say?

Describe the case, the event, the situation, and the 'players'

The role of discussion

-After you had diagnosed the potential problem, what did you think were potential management options?

-What were you thinking about the situation?

-What else was going on at the time?

-What or who influenced the next steps in decision making?

-Who was involved in the decision making?

-Who were you able to discuss the case with at the time? Who did you find most helpful and why?

-What was the nature of the discussion?

-What helped you decide whether to ask for help or not? What sort of response were you looking for?

-What role did your clinical team play? What role did your boss play?

-Looking back, what helped you in making your decisions? What hindered you?

-Are there any other factors that you feel were important?

Broadening discussion

-When thinking about other cases where you have difficult decisions to make about patient management, in relation to case discussion in these situations:

-What do you find helpful?

-How do you like to discuss cases? What response do you hope for?

- What factors determine whether you discuss a case? Does this vary in and out of hours?
- In what situations would you discuss a case with your Consultant in charge? What factors influence this?
- Where do your peers fit into this?
- What is the role of workplace based assessments/ your portfolio in thinking about cases?
- How does changing teams/ jobs affect your approach?
- Looking back on your career so far, what do you think are the most important factors in helping you develop decision making skills?
- What has hindered you?
- What are the key ways to help you discuss a case?
- Is there anything else that you feel is important?

- If you were giving advice to someone starting off their medical career, about how to reach wise judgements, what advice would you give?

Appendix 4. The training doctors and their difficult cases

In this study 12 doctors have been interviewed: 3 F2 doctors in their second year of working; 6 GP registrars nearing the end of 5 years of postgraduate training and soon to be independent practising GPs and finally 3 Higher Specialist trainees within 18 months of becoming Consultants.

Each doctor had been asked in advance to think about a challenging case, where there was a choice to be made as to how to manage a case, particularly a choice between intervening and doing something or actively deciding to withhold a treatment or watch and wait.

Tom, F2 doctor

Tom had carried out a variety of hospital posts and 1 post in a GP practice within the first 18 months of working. He described a case from his time in General Practice where he was asked to see an elderly lady in a nursing home on his own. The lady had advanced dementia and could not communicate. Tom had been asked to see the lady because the nursing home staff had noticed a cough and wanted her reviewed. After assessing the lady Tom felt she was very unwell, probably coming from a chest infection. Tom's dilemma was that this lady had been steadily deteriorating, and he felt torn between trying to treat her infection in the nursing home where she might be more settled but may not have the best chance of recovering, or admitting her to hospital where she had the best chance of recovery but it might not be what the patient would have wished for. He consulted with the nursing home staff, a relative and a GP in the practice. The decision taken was to admit the lady, who did not respond to treatment and died shortly afterward in hospital. Tom was left wondering if the decision had been the right one.

Cath, F2 doctor

Cath talked about 2 cases. One of the challenges in trying to access this topic was the fact that for training doctors, their main opportunity to discuss cases in detail is as part of a summative assessment process. The first case Cath talked about had some challenging aspects, but ultimately she was clear how the case was managed and it would have made a good case to talk about as part of an assessment process, but less so for discussing dilemmas. When she relaxed, she discussed a second case where she was on-call in hospital having to assess a patient who had a new diagnosis of severe organ

damage with several complications who was for full, active treatment. On Cath's shift the man started to bleed internally, and the F1 doctor, who had gone first to see the patient, asked for Cath's help. When Cath got there, she looked at the whole picture and felt that the man was very ill and unlikely to survive. She felt that he did not want them to do any more than to keep him comfortable.

Cath knew that the nursing staff felt he should be left but the F1 doctor would feel very uncomfortable with that decision. She discussed with the patient's family who were distressed and did not want to be involved in decision making. She asked for senior input and got telephone advice to actively manage the case- she strongly disagreed with this (and felt if the senior doctor had seen the patient the decision would have been different) but felt she had to follow orders. The senior doctor felt it was inappropriate for the on-call team to decide to withhold treatment without the day team's guidance. Cath decided to actively manage as she was told to, but also prescribed medications that might help if the patient was dying and spent some time with the family. She suggested to them that if they felt the treatment started should be stopped, they could ask for the patient to be left to die in peace. She recognised that she was being slightly passive aggressive and felt that the correct decision would only be reached if she empowered the family to insist on a course of action, which she could then follow without undermining her senior. The patient died soon after, and Cath felt her analysis of the situation had been correct, but wished she had been more assertive in asking the senior doctor to review the patient and saying what she thought.

Jane, F2 doctor

Jane described a case where she saw a lady with advanced heart disease who had deteriorated when she was on-call, and looked very unwell as though the patient had experienced a further cardiac event, blood clot or something similar. Her initial dilemma was whether to intervene because her instinct was that this was unlikely to be a reversible situation. Jane's dilemmas were around what to actually do. She could give some medications which might improve both the condition and how the patient felt, but at risk of causing other problems. In this case she was well supported by her senior doctor on-call who came to see the patient and came up with a management plan jointly with Jane (which boosted Jane's confidence). Together they decided with the family on a treatment course which everyone felt comfortable with. This included some active management to reverse the problem, alongside providing any medication for symptom

relief. The next dilemma came on the following night when Jane was on-call. The patient's regular Consultant had reviewed the patient and affirmed Jane's diagnosis and most of the management plan. The Consultant however had crossed off 1 of the drugs prescribed for pain relief because of a concern that it might build up in the patient as the lad's kidneys deteriorated. The lady was now in pain and the nursing staff on the ward wanted the analgesia prescribed. Jane felt acutely a dilemma of whether to follow her instinct and prescribe the safest option to keep the patient comfortable, but seemingly undermining the Consultant decision. She prescribed the medication as previously, confident that she was following guidelines but uncomfortable that she might seem to be acting in a confrontational manner.

Freya, GP registrar

Freya described a case which took place when she was working in a GP practice and she went to see a lady who was severely jaundiced. This was a new serious problem, and needed urgent investigations and a hospital admission. Freya's dilemma was that the lady had also said it was a significant birthday on the day of the home visit, and that the lady's family had planned to take her to a nice restaurant. Freya had to weigh up 2 issues- whether to tell the lady about some serious concerns about the diagnosis on her birthday (whether not doing so was kind or unnecessarily paternalistic and withholding information) and whether delaying an admission might adversely affect her health. There was another issue of concern to the lady, the wellbeing of her dog and making plans. Freya was clear that guidelines all backed immediate action, but she decided to navigate a process of what she thought was in the patient's best interests. The lady stayed at home for a few more days, some routine investigations were carried out which furthered the process of reaching a diagnosis. The lady enjoyed her birthday and then a discussion took place about her health, she was admitted to the hospital but only after she had sorted out her dog. This decision making led to Freya having to put in a lot of extra work, including on days off, but felt that it as the right decision. This was backed up by her GP trainer. Ultimately the delay had not led to any problems. Subsequently the lady was investigated in hospital, and unfortunately died from a complication of a procedure, unrelated to her original problem.

Ellen, GP registrar

Ellen also initially described a "safe" case where she had managed an ill patient well. Her second case was much more relevant posing a number of issues. She was working

in a GP surgery seeing a patient with mental health problems. She had met the patient on a few occasions, each time with different physical symptoms with no obvious cause. Through these assessments, the patient build up trust with Ellen and she started to be the only doctor he saw. On one visit, she felt that he was displaying signs of being actively psychotic. He was refusing to see a psychiatrist or another doctor. She was weighing up safety issues for the patient, the public and herself; whether to risk the relationship with him by overruling the patient by trying to use the mental health act. She discussed his case with both her GP supervisor and had regular advice from a psychiatrist but felt a huge weight of responsibility as the only doctor who he would see, and feeling that if she tried to get out of the situation he might do something harmful. She continued to work with him, eventually persuading him to see a psychiatrist. The one to one relationship with her only ended by Ellen moving to another post.

Kate, GP registrar

Kate described a situation when she was working in Accident and Emergency. An elderly man was admitted via an ambulance from a nursing home to the resuscitation area. A letter came from a GP who had visited the patient, confirming that the man had advanced dementia, had recent admissions and that the hospital had suggested further hospital admissions were not in the patients' best interests. The man was unwell with a likely chest infection. It was night-time and so there was no access to old notes or the GP responsible for the man's care. Kate tried to get advice from her senior colleague, but she described this doctor as someone who was never available for help and did not respond to 3 calls. In the absence of help, Kate became the senior doctor in the situation. Her instinct was that this man was dying and should not be treated, but felt she was not senior enough to make that decision without more information or advice. Kate was weighing up pressures of knowing what the hospital had previously said, her instinct, the fact that there was an infection that was potentially treatable and trying to imagine what she would do if he was a member of her family. She felt isolated by having a senior doctor who was not responding to her calls, and whose judgement she and her colleagues felt was poor anyway. Kate decided to treat this man's infection and see whether he responded. The team the next day vindicated her decision and continued the management for a further 48 hours before it was decided the patient was dying. Kate felt comfortable in her decision making, but thought she might have managed it differently had she seen the patient at home or had more information.

Tina, GP registrar

Tina described a case of a lady with advanced breast cancer who was in hospital for end of life care and symptom control. She was in a lot of pain which Tina felt would respond to a particular painkiller, ibuprofen. The patient had previously had an episode of probable gastrointestinal bleeding and ibuprofen is at risk of causing that as a serious side-effect. Tina had to weigh up what she felt was a treatment that would really help the pain (and felt that other options would be worse) with the risks that the patient may have internal bleeding which might be catastrophic in this situation. She discussed the options extensively with the patient whose main goal was to be painfree. Tina decided to use the medication, feeling that the goal of the treatment outweighed the risk that the patient might die if severe bleeding happened. Tina decided to put the patient on the ibuprofen on a Friday afternoon and worried about the decision over the weekend. She tried to minimise potential side effects. The patient went on to be comfortable, but subsequently had a significant bleed and died over the weekend.

John, GP registrar

John had looked after a patient in a palliative care inpatient setting for some time with advanced cancer. The patient had been transferred to another ward for management of a specific problem, but had deteriorated and the ward wanted the patient to be transferred back for end of life care. The patient had been seen by a Consultant who agreed to the transfer on the basis that the patient was dying. John went to see the patient to make sure he was ok and felt that a reversible problem had been missed. John thought the patient had developed signs of heart failure which could be addressed, but with a completely different plan than that envisaged by the Consultant. John had not expected or been looking for a reversible problem, but when he picked up something from the examination, pulled together different aspects of the case over the preceding days which seemed to fit. John felt an acute pressure- an ambulance arrived to take the patient back to the palliative care setting, but John wondered if that was the right setting. He made a quick decision that it was (in his head going through a detailed flow chart of scenarios). He then made further decisions about the treatments needed and tried to reverse the situation. However a few hours later it was clear that this was not working and John withdrew the treatment. Retrospectively, John felt he had made the correct diagnosis which had been missed by others, but that the resulting decisions subsequently made no difference to the outcome.

Anna, GP registrar

Anna on the day of the planned interview had been on-call overnight and wished to discuss a case that had happened during that shift. She described a patient with advanced cancer who had been stable and was due to be discharged shortly. During the night he had fallen twice, later on becoming unresponsive with his physical observations deteriorating. Anna had been at home and was thinking of what she would do while driving in. Anna was clear on first seeing the patient that he was very unwell, that something acute had happened and that without an intervention, the patient would die. She felt a quick decision was needed to either fully try and reverse the situation, or follow her instinct, that perhaps it was too late to do anything. The patient was unable to speak but the family arrived shortly after Anna. Anna spoke to both the family and Consultant on-call and decided to follow her instincts. The patient was kept comfortable.

Ben, Specialist Registrar

Ben initially described a case where he saw an outpatient who had a progressive respiratory condition who had what sounded like a stroke and described having to weigh up how actively he should manage the situation. As with others, the case was reasonably clear in terms of what could/ should be done and Ben had managed the case well. Ben then described a second, much more complex scenario. This man had a severe neurological problem and had been stable, waiting to go home. Ben was called during the night because the patient's catheter had stopped working and then was bleeding. The patient could not communicate, his wife was on holiday and it was documented in the notes that he wanted to avoid acute settings. This was a non-acute unit, and paramedics had been called to transfer the patient. Their arrival added to the time pressures to make quick decisions. The team was split as to how actively to manage the patient and Ben felt he had to interpret the patient's desire not to be in an acute hospital. In the end, after further consultation, Ben decided to send her to Accident and Emergency where the patient continued to deteriorate and died shortly afterwards. Ben felt he had made the right decision, and received back up in this from the patient's family and his Consultant.

Bob, Specialist Registrar

Bob described another case when he was on-call at the weekend and was asked to review a patient who had multiple illnesses but had been stable. Suddenly she had

become unstable from a cardiovascular point of view, which was a new problem. Bob felt it might be reversible, but knew also with the patient's background problems that the patient may be dying. Bob knew that if the patient was dying, she wanted to die in a hospice, where she currently was. That felt like a big pressure to get the decision right. There was also pressure from the patient's daughter to do nothing. Bob had discussed the case with the acute team who agreed with him that transfer to an acute ward would be appropriate. Bob decided to compromise by trying to reverse the problem, but to transfer to hospital which would have been her best management option to improve the patient's condition, if necessary. The patient's heart rate responded and she returned back to the way she was. Bob felt that this had been a narrow escape- she was in the process of arranging a hospital transfer when the clinical situation improved. She felt that a transfer, although medically the correct decision, would not have been what the patient wanted.

Dave, Specialist Registrar

Dave saw a patient with a brain tumour, under the care of another team. There was conflict between the 2 teams as to whether the patient was dying or not, and Dave had been asked to intervene. The patient was starting to bleed and there was an issue about whether to carry out a procedure. Dave felt the procedure might help, but for entirely different reasons to that of the other team. He made an initial decision to go along with the plan but for totally different reasons without expressing them to avoid conflict. However as Dave saw the patient more, it became clear that the junior doctors and nurses all felt that the patient was dying but could not overrule their Consultant who wanted full active management. Dave needed to weigh up whether to try and intervene to benefit this individual patient, but was concerned that it might lead to problems with this consultant which might impact on referrals about future patients, affecting their care. Dave worked carefully with the team to make sure they managed this patient well to enable her symptom needs to be met as she continued to deteriorate. He suggested they continue with the plan for the procedure as requested by the Consultant, but that an anaesthetic opinion might help. The Consultant was happy with this because it seemed like Dave was being helpful. Dave was confident that the opinion would be that the patient was not well enough to undergo the procedure. That was what happened and the patient later died peacefully without the procedure, but also with relations intact and Dave having avoided overtly undermining the Consultant.

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