Understanding how organisations ensure that their decision making is fair

Kate Cox, Lucy Strang, Susanne Søndergaard, Cristina Gonzalez Monsalve
Decision making is a core activity for professional regulators. However, high-impact regulatory decisions are often made in an uncertain environment affected by resource constraints, individual biases and time pressures. Regulators can draw on a range of tools and techniques to strengthen their organisational decision making processes to address these challenges.

RAND Europe was commissioned by the General Medical Council (GMC) to conduct a study examining the tools, practices and processes used by different organisations to support fair decision making. The overall purpose of this study was to help the GMC draw lessons for its own internal decision making activities from methods used elsewhere.

This study draws on research insights into decision making and an exploration of the decision making practices of three comparator sectors in the United Kingdom (UK): healthcare regulation, legal regulation, and defence and security. Specifically, the report examines the decision making tools used by the Nursing and Midwifery Council (NMC) (healthcare), the Solicitors Regulation Authority (SRA) (legal), and various organisations within the defence and security sector.

This report will have relevance for GMC directors, policy staff and operations staff, as well as to researchers and practitioners working within the field of organisational decision making. It is also of relevance to other regulatory bodies in the UK with an interest in the findings and conclusions from the work.

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For more information about RAND Europe or this study, please contact:

Dr Susanne Søndergaard
Senior Policy Analyst
RAND Europe
Westbrook Centre
Milton Road
Cambridge CB4 1YG
UNITED KINGDOM
Tel: +44 (0)1223 353329 x2522
Email: susanne_sondergaard@rand.org
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Executive Summary

This study examines how tools, processes and practices are used to improve organisational decision making

Professional regulators make complex and high-stakes decisions on a regular basis. Decisions made by the General Medical Council (GMC) and other regulatory bodies can directly influence the ability of professionals to practise or to progress in their careers. To address the challenges facing decision makers – including resource constraints, time pressures, and individual biases – professional regulators draw on a range of tools and techniques aimed at supporting robust decision making.

This report describes the findings of a study undertaken in late 2016 and early 2017. The study was intended to enhance understanding within the GMC of decision making tools, processes and practices used in the health sector, as well as in legal and defence and security organisations – sectors that, despite their different focus areas, face comparable issues and challenges. This document addresses the following research questions (RQ):

- **RQ1**: What academic definitions and frameworks exist around 'fair decision making'?
- **RQ2**: Which tools, processes, good practices and methods can be used to ensure high quality and fairness in decision making?
- **RQ3**: What lessons can be drawn from this study for the GMC’s decision making practice?

To answer these research questions, this report comprises three primary components: an overview of the academic landscape in relation to organisational decision making; an appraisal of challenges faced by and tools used within the case study sectors; and a synthesis of implications for GMC practice. The research is based on a wide-ranging literature review spanning academic and grey literature, and a series of interviews with academic experts as well as with representatives from the health, legal, and defence and security sectors.¹

¹ Research interviews were conducted with representatives from the GMC, the Nursing & Midwifery Council (NMC), the Solicitors Regulation Authority (SRA), and a range of defence and security organisations.
There is a large body of academic work on decision making theory but little agreement on what constitutes ‘fair decision making’

Upon the request of the GMC, the study focused primarily on individual decision makers, although research on group and organisational decision making is also reflected in this report. The literature highlighted several factors that support robust organisational decision making: strong leadership and demonstration of emotional intelligence; an open and transparent organisational culture; and a clearly defined organisational structure. The analysis also concluded that engaging in critical thinking can lead to fairer decision making at the group level and that inviting constructive challenge from colleagues is an important strategy for individuals.

While the research brief outlined by the GMC concerned ‘fair’ decision making, this term was found to be absent, inconsistent or problematically defined in the literature and was interpreted in various ways by academic interviewees. This may reflect the subjective nature of the term and the challenges inherent in measuring ‘fair outcomes’. In consultation with the GMC, the RAND study team instead focused the analysis on indicators of ‘fair decision making’, namely objectivity, consistency, reliability, transparency, accountability and evidence-based decision making.

Decision makers in health, legal and defence and security organisations face a range of challenges

Research interviews with personnel across the case study organisations highlighted challenges facing decision makers including:

- **Ensuring consistency across an organisation.** The large size of certain organisations and the wide range of decisions made within them can create obstacles for ensuring consistency in decision making. Combined with high staff turnover and lack of information-sharing across departments, this can hinder consistent decision making. **Relevant tools and methods:** Decision making tools used to address this challenge include internal consistency checks, which can involve calibration meetings within and across departments to ensure that decision making processes are consistent.

- **Recording decisions and capturing lessons learned.** A challenge affecting all three sectors examined relates to ensuring that decisions are recorded routinely. A key finding is that – in the context of time pressures and other constraints – it can be difficult for decision makers to take the time to reflect on their decisions, to consider what worked well and what could be improved, and to ensure that lessons learned are recorded more systematically. **Relevant tools and methods:** Decision making document templates can be used to help ensure that decision making processes and outcomes are recorded routinely.

- **Keeping pace with legislative changes.** The legal framework in which professional regulators exercise their regulatory powers can be very complex, especially in areas in which EU Directives apply. Regulators’ processes, standards and training programmes need to keep up to date with changes to the external legal and regulatory environment affecting their professional activities. **Relevant tools and methods:** Horizon scanning can help decision makers keep track of wider changes in the legal and
regulatory environment. Within an organisation, this involves experts conducting research focusing on a wide range of issues in the market and legal environment affecting organisational processes and decision making.

- **Avoiding bias in decision making.** Another challenge concerns the need to ensure that decision makers collect and process evidence effectively and objectively. Some of the decisions taken by regulatory professionals are judgement calls, and an important challenge is to ensure that these are based on a thorough and objective consideration of all relevant facts. **Relevant tools and methods:** Unconscious bias training can be delivered to help staff weigh up information, provide clear reasons for decisions, and know when to seek advice or guidance from a colleague in order to manage their cognitive biases.

- **Managing the available information effectively.** Due to the sensitive nature of much of the data handled by security and defence professionals, decision makers in this sector have a tendency not to share information. Examples from the health and legal sectors highlighted a similar issue: when departments work in silos, information is sometimes not shared and managed appropriately. Moreover, when decision makers are dealing with a heavy workload and a high volume of decision making information, it can be difficult to assure the quality of all decisions made. **Relevant tools and methods:** To deal with (e.g.) a high volume of applications, an organisation can set up an automated system to carry out initial assessments of certain information (e.g. examination results) before decision makers review the applications that have been sifted.

- **Ensuring that staff members use the tools available.** Even when decision making tools are available to employees, it can be challenging to ensure that they are always used in the context of time constraints and other pressures, particularly in sectors where high-quality decisions have to be made very quickly.

A range of decision making tools and methods were identified with potential applicability for the GMC

The report highlights a number of tools, processes and methods available to decision makers to address these challenges. Table ES.1 presents an overview of the tools used in the GMC and in the comparator organisations: the Nursing & Midwifery Council (NMC), Solicitors Regulation Authority (SRA), and defence and security organisations. It also highlights tools and methods identified in the literature and in research interviews with academic experts.
Table ES.1: Overview of Decision Making Tools, Practices and Processes

<table>
<thead>
<tr>
<th>Methodology, Models and Templates</th>
<th>Client</th>
<th>Comparator organisations</th>
<th>Research insights</th>
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2 Table ES.1 lists the tools, processes and practices identified through the research interviews and the literature review. Given the limited sample of interviewees (see Table 1.2 in Section 1.4.2), we recognise that there may also be other tools and processes used by these organisations that were not mentioned by interviewees.
Lessons can be drawn from this study for GMC practice

As the table indicates, and based on our engagement, the GMC are already employing a number of these tools and techniques to a greater or lesser degree. Additional methods can further strengthen the GMC’s decision making practices, such as the use of automated decision making tools to help individuals manage the high volume of applications and an improved internal understanding and assessment of the competences required for decision makers.

In addition to the tools and techniques examined, research interviews and the literature review highlight a number of good decision making practices at the cultural and structural levels:

- Clearly attributing specific roles and responsibilities for decision makers (e.g. through a scheduled delegation of decisions).
- Clearly communicating information to employees concerning the resources at their disposal (e.g. access to legal advisors and guidance documents).
- Fostering transparency, a learning environment, and open communication about decisions and their outcomes.
- Promoting good knowledge management practices so that the decisions and reasoning behind them are documented and accessible to others in the organisation (e.g. through decision document templates or justification of decisions).
- Ensuring that there are discussions regarding how to sustain and improve making processes and outcomes on a regular basis, both at the directorate and organisational levels.

As the study did not assess all of the GMC’s structures and processes – nor did it seek to evaluate the effectiveness of the tools examined – this report will not draw any conclusions regarding whether decision making practices across the organisation are aligned with its internal standards.
In conducting this study, the RAND study team is grateful to the many people who provided their time, advice and support throughout the process.

The team is particularly grateful to Andrea Callender, Elaine Bromberg, Karen Roberts and Paul Buckley at the GMC who, as well as commissioning this study, have provided numerous contacts and contributed valuable feedback as the study progressed.

In addition, thanks are extended to the academic experts and practitioner interviewees who participated in the study, without whom this study would not have been possible. Their affiliations and, in most cases, their names, are listed in Appendix C; some interviewees’ identities have been anonymised at their request.

Thanks are also due to Jody Larkin from RAND Knowledge Services for her support in conducting the literature search and to the Quality Assurance Reviewers, Mary Dixon-Woods (University of Cambridge) and Emma Pitchforth (RAND Europe) for their insightful feedback. In addition, thanks are extended to Sarah Grand-Clement for her formatting inputs to the report.
### Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>CILEx</td>
<td>Chartered Legal Executives</td>
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<td>DRG</td>
<td>Decision Review Group</td>
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<td>ESRC</td>
<td>Economic and Social Research Council</td>
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<td>GMC</td>
<td>General Medical Council</td>
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<td>GMP</td>
<td>Good Medical Practice</td>
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<td>MOD</td>
<td>Ministry of Defence</td>
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<td>MoRiLE</td>
<td>Management of Risk in Law Enforcement</td>
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<td>MPTS</td>
<td>Medical Practitioners Tribunal Service</td>
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<td>NPCC</td>
<td>National Police Chiefs Council</td>
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<td>NMC</td>
<td>Nursing and Midwifery Council</td>
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<td>OCCE</td>
<td>Office of the Chair and the Chief Executive</td>
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<td>PSA</td>
<td>Professional Standards Authority for Health and Social Care</td>
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<td>QUORG</td>
<td>Quality Outcome Review Group</td>
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<td>REA</td>
<td>Rapid Evidence Assessment</td>
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<td>RQ</td>
<td>Research Question</td>
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<td>SRA</td>
<td>Solicitors Regulation Authority</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>UKCC</td>
<td>United Kingdom Central Council for Nursing, Midwifery and Health Visiting</td>
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1. Introduction

1.1. Context

Decision making is a core activity for professional regulators. The decisions made by the General Medical Council (GMC) and by other regulatory bodies can directly influence outcomes for professionals, for example regarding their fitness to practise or their ability to progress through medical training and education. Despite the high-impact nature of regulatory decision making, decisions are often made in an environment affected by challenges including resource constraints, time pressures and a shortage of evidence.

By drawing on a range of tools and techniques aimed at supporting decision making, regulators seek to ensure that decisions are made in a fair\(^3\) and unbiased way in order to ensure the resulting decisions are justified, consistent and objective. How an organisation is perceived in relation to its decision making practices may have reputational consequences: decision making processes and outcomes may influence perceptions of the fairness of organisational procedures, both internally and externally. As well as promoting fair outcomes for individuals, robust regulatory decision making is also, of course, important for protecting public safety.

The GMC has commissioned RAND Europe to undertake a study examining decision making tools, practices and methods used in other organisations involved in complex and high-impact decisions. The purpose of this analysis is to help the GMC learn from the organisational practices, tools and procedures used outside the GMC, and to use this information to support decision making across GMC activities to align with its standards of good practice.

1.1.1. The General Medical Council

The GMC is an independent organisation that maintains the official register of medical practitioners in the UK. Under the Medical Act 1983,\(^4\) its main responsibility is to protect public safety by controlling entry to the register, and taking action to stop or limit a doctor’s right to practise medicine if there is

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\(^3\) In this report, ‘fair decisions’ in the context of the GMC are defined as decisions that are consistent, objective and aligned with the standards, policy and guidance of the GMC. For more discussion on decision making definitions, see Section 2.4.

\(^4\) The GMC was first established under the Medical Act 1858. The current Act is the Medical Act 1983, which has been amended on a number of occasions since coming into force, most recently in 2015. See GMC, n.d.(b)
evidence that their fitness to practise is impaired. It also regulates and sets standards for medical education and practice across the UK.5

The GMC is a registered charity in England, Wales and Scotland. It is funded by doctors’ registration fees and fees for examinations. Its governing body, the Council, has 12 members of which six are doctors (‘registrants’) and six are lay members, all appointed following an independent appointments process.

The GMC consists of six directorates, namely:

- Registration and Revalidation
- Fitness to Practise
- Resources and Quality Assurance
- Education and Standards
- Strategy and Communication
- Office of the Chair and the Chief Executive (OCCE).

The Medical Practitioners Tribunal Service (MPTS)6 is the independent adjudication function for UK doctors. The MPTS protects patients by making independent decisions about a doctor’s fitness to practise, measured against professional standards set by the GMC.

Decision making is central to the work of the GMC across these areas. When making decisions, the GMC aims to achieve an appropriate balance between protecting the public and safeguarding doctors’ right to practise.7 In agreement with the client, this report will not deal specifically with the MPTS, as the hearings service is fully independent in its decision making and separate from the investigatory role of the GMC. Rather, the main decisions of interest for the purposes of this study are those conducted within the organisation in the following areas:8

- **Registration**, i.e. determining which doctors are qualified to join the medical register.
- **Revalidation**, i.e. ensuring that every doctor practising in the UK is competent and that their knowledge and skills are up to date.
- **Dealing with concerns about doctors**, i.e. investigating and acting on concerns about doctors.
- **Overseeing doctors’ education and training**, i.e. assessing the extent to which educational institutions are meeting the educational standards set by the GMC for all UK doctors through undergraduate and postgraduate education and training that includes approving training posts, programmes and assessments.

GMC Decision Making Tools, Processes and Practices

GMC already deploys a number of safeguards to minimise bias and promote fair decision making by personnel: professional standards, audit, consistency checks, calibration meetings, mentoring, decision making templates, and training. For example, the core professional standards expected of all doctors are

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5 GMC (2014a).
6 The MPTS is independent from the GMC in the context of its adjudication function.
7 RAND Europe interview with Anna Rowland, GMC, 12 October 2016.
8 In discussion with the GMC, it was decided that human resources decisions, tribunal decision making, and decisions made by the GMC’s Ethical Standards team were all beyond the scope of this study.
described in *Good Medical Practice (GMP)*, which outlines the major elements of a doctor’s role including responsibilities to work with patients and treat them in a respectful manner.\(^9\) The GMC offers guidance on consent, confidentiality and other ethical principles that doctors use on a daily basis, as well as guidance on areas such as care provision for people who are dying and child protection responsibilities for doctors. The GMC also provides case scenarios, explanatory guidance and other tools to help doctors apply the principles in practice.

Additionally, there are three major *audit mechanisms* in place in the Fitness to Practise directorate:

1. Peer review of cases.
2. Quality assurance and continuous improvement periodic audits of decisions.
3. Systems and assurance team system reviews, which assess risk and quality of team outputs or processes.\(^10\)

The Registration and Revalidation directorate has also produced new guidance for individuals responsible for making decisions about the registration and revalidation of doctors.\(^11\)

The GMC commissions internal audits of decision outcomes and schedules periodic audits of a sample of cases in order to support quality assurance of its decision making processes. The Professional Standards Authority for Health and Social Care (PSA), which is accountable to UK Parliament,\(^12\) carries out an annual Performance Review of the GMC and produces an annual summary of its assessment of whether the GMC has met the PSA’s Standards of Good Regulation. The PSA also carries out routine audits of the initial stages of the GMC’s fitness to practise processes. This is conducted on a five to six year cycle, unless a concern is identified in the meantime. Additionally, the GMC schedules periodic audits of a sample of cases in order to support quality assurance of its decision making processes.

The GMC has developed several tools and methods to ensure that decisions are made in a consistent way across the organisation. *Internal consistency checks* are designed to ensure that decision making processes are being implemented in a similar way across different teams. For example, in the Education and Standards directorate, teams organise *calibration meetings* to ensure that the outcomes of education provider visits across regions are consistent.\(^13\) In the interests of transparency and consistency, this directorate also publishes a list of ‘exploratory questions’, so that education providers are aware of the assessment format and so that questions are asked in a consistent manner by GMC personnel.\(^14\)

The *mentoring system* used by the GMC is designed to ensure quality and consistency in decision making. In the Registration and Revalidation directorate, for example, decision makers are assigned a

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\(^9\) See for example GMC (2014a).

\(^10\) RAND Europe interview with Anna Rowland, GMC, 12 October 2016.

\(^11\) GMC, 2016(a).

\(^12\) Along with the GMC, the PSA also audits seven other regulators of healthcare professions in the UK: the General Chiropractic Council, the General Dental Council, the General Optical Council, the General Osteopathic Council, the Nursing and Midwifery Council, the Pharmaceutical Society of Northern Ireland, and the General Pharmaceutical Council.

\(^13\) RAND Europe interview with Jessica Lichtenstein, GMC, 10 October 2016.

\(^14\) RAND Europe interview with Jessica Lichtenstein, GMC, 10 October 2016.
mentor who oversees their decisions and provides guidance. Mentors sign off mentees when they consider that they are sufficiently competent and experienced to make decisions independently. Introduced in the GMC in 2009, this process is designed to identify and support mentees struggling with decision making at an early stage. In a similar way, investigation staff members nominated to become Assistant Registrars are mentored by a more experienced Assistant Registrar and/or an Investigation Manager until they are deemed sufficiently competent to make decisions without oversight. Another method used in the GMC to promote consistency is the ‘decision making template’: all decision makers use the same template so that decisions are documented in a comparable way against a common framework. This also prompts decision makers to ensure they record the evidence leading to the decision and the rationale behind it in a consistent manner.

The GMC also implements internal training programmes to enhance decision making. In 2015, for example, the GMC delivered a programme of unconscious bias training to 200 staff involved in making decisions about doctors across the GMC. The Equality and Diversity team continue to deliver bespoke training to teams of staff and associates involved in making decisions about doctors. Training is also delivered on decision writing including appropriate use of language and legal considerations regarding the decision making process. Decision makers receive one-day induction training on decision making principles and guidelines in the Registration and Revalidation directorate, and bespoke training is also provided for externally contracted Associates as well as for staff in the Education and Standards directorate.

1.2. Purpose and Scope

The GMC is aware that many other organisations in the UK also have to make complex, high-impact decisions under analogous conditions and constraints. To strengthen its own internal procedures – as described in the previous section – the GMC is interested in developing a better understanding of the tools, practices and processes used in other organisations to ensure quality and consistency in their decision making. The overall purpose of this study is to help the GMC draw lessons for its internal decision making activities from these external practices. Being a fair regulator is a priority for the GMC, as

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15 RAND Europe interview with Richard Amison, GMC, 4 October 2016.
16 An Assistant Registrar has responsibilities to make decisions delegated from the registrar. He or she reviews and interprets medical supervision reports, and decides on what action to take in cases where a doctor’s health has deteriorated or a doctor has breached a restriction on their practice. See GMC, 2015.
17 RAND Europe interview with Anna Rowland, GMC, 12 October 2016.
18 RAND Europe interview with Richard Amison, GMC, 4 October 2016.
19 Personal communication with Callender, GMC (2016).
20 RAND Europe interview with Anna Rowland, GMC, 12 October 2016.
21 RAND Europe interview with Richard Amison, GMC, 4 October 2016.
22 RAND Europe interview with Jessica Lichtenstein, GMC, 10 October 2016.
set out in its *Equality and Diversity Strategy*:23 as such, this study is part of a broader programme of work to understand the impact of the GMC’s activities in terms of fairness.

While the report provides an overview of methods aimed at improving decisions in organisations, it should be noted that this is not intended to be an exhaustive inventory of decision making tools. A further caveat is that the report provides a descriptive overview of decision making methods but the project scope was not to evaluate the effectiveness of decision making practices used in the GMC or other comparator organisations, or to pass qualitative judgement on the organisations in which they are used.

Comparator organisations involved in complex and high-stakes decisions were selected from three sectors: healthcare, legal, and security and defence. UK-based institutions were selected as the RAND study team considered that lessons from UK-based organisations would be most relevant for the GMC, given its location and focus.24 Table 1.1 presents the comparator sectors and the rationale for their inclusion.

Table 1.1: Comparator Sectors and Organisations

<table>
<thead>
<tr>
<th>Sector</th>
<th>Organisation(s)</th>
<th>Rationale for Inclusion</th>
</tr>
</thead>
</table>
| Healthcare | Nursing and Midwifery Council (NMC) | • The NMC operates in the health domain, faces similar challenges, and adheres to the same regulations as the GMC. Responsibilities shared by the two organisations include regulating health and care professions by establishing standards for practice and education, and taking measures when these are not met.  
• The NMC has a similar organisational structure to that of the GMC, with directorates for Fitness to Practise, Registration and Revalidation, and Education, Standards and Policy.  
• The NMC has a track record of collaboration with the GMC, with a recent initiative to develop joint guidance for doctors, nurses and midwives on how to apply the ‘duty of candour’25 in practice. |
| Legal | Solicitors Regulation Authority (SRA) | • Like the GMC, the purpose of the SRA is to regulate a profession.  
• The SRA and GMC share common roles and responsibilities, e.g. developing standards, registering professionals, and administering sanctions when standards are not met. |

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23 GMC (2014b).

24 While the comparator sectors focus on UK organisations only, the scope of the literature review includes sources from the UK, US, Australia and EU countries in order to maximise relevant literature identified (see Appendix A).

25 See e.g. new guidance for doctors, nurses and midwives across the UK on being open and honest with patients when things go wrong (NHE, 29.06/2015). As of 8 March 2017: http://www.nationalhealthexecutive.com/Health-Care-News/new-duty-of-candour-guidance-published-for-nhs-staff
Focusing on a sector outside healthcare regulation could potentially lead to the identification of a greater range of decision making tools and practices not previously considered by the GMC.

Security and Defence

Like the GMC, military, security and policing organisations face analogous pressures around ensuring evidence-based, high-stakes decisions in cases where time is pressured, resources are finite and evidence is limited.

The RAND study team has relevant subject matter expertise and a wide range of UK defence and security matter contacts to draw on.²⁶

This sector was also selected in order to draw on other innovative practices that would not otherwise have been identified, such as decision making models and decision option metrics (see Section 3.4.3).

1.3. Research Questions

The report addresses three main research questions (RQ):  

- **RQ1**: What academic definitions and frameworks exist around 'fair decision making'?
- **RQ2**: Which tools, processes, good practices and methods can be used to ensure high quality and fairness in decision making?
- **RQ3**: What lessons can be drawn from this study for the GMC’s decision making practice?

1.4. Methods

Two main methods were used for this study: a literature review, and key informant interviews. These methods are described in the sections below.

1.4.1. Literature Review

The RAND study team conducted a Rapid Evidence Assessment (REA)²⁷ of peer-reviewed academic and grey literature²⁸ to provide an overview of the literature on organisational methods used to support fair decision making. The REA was not a systematic review of the literature in this domain. Instead, it aimed

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²⁶ See for example, Reding et al. (2014).

²⁷ A Rapid Evidence Assessment follows the principles of a systematic review in terms of its reproducible and systematic search methods but restricts the search scope (e.g. year of publication).

²⁸ ‘Grey literature’ is produced by organisations outside of academic or commercial publishing channels. Examples of grey literature include government documents, technical reports, working papers, doctoral theses and conference proceedings.
to identify key sources through targeted database searches and snowball searching. A formal quality assessment of the literature was not conducted in relation to validity, reliability, generalisability and objectivity, which are criteria often used in systematic reviews of research (see, for example, Hannes et al. 2011). To assess the rigour of the literature reviewed, the RAND study team ensured that all academic publications included in the analysis were peer-reviewed. The assessment selection of grey literature for inclusion in the review was based on the RAND study team’s assessment of its rigour and relevance to the aims of the study.

At the request of the GMC, the review focused primarily on individual decision makers, although research on group and organisational decision making is also reflected in this report. Furthermore, while the literature tended to focus on decision making at the executive level, the GMC requested that the study team focus on a wider range of staff roles and grades, as GMC staff across the decision making hierarchy make decisions in their day-to-day work. In reviewing the papers, the study team was guided by these considerations with the aim of producing a narrative synthesis of relevant findings.

The search strategy was structured around a ‘Topic-Descriptors-Context’ framework, which groups search terms around themes: the central subject of ‘decision making’ (the ‘topic’); terms characterising specific decision types (the ‘descriptors’); and the setting in which decisions are made (the ‘context’). The review focused primarily on literature from countries agreed upon with the GMC, namely the UK, the United States of America (US), Australia and European Union (EU) countries. Furthermore, given the vast numbers of papers captured by the search strategy outlined in Appendix A, a decision was made to limit the initial review to only literature published after 2005, with snowballing of relevant literature referred to in these materials without date restrictions.29

The REA consisted of several stages: after developing and refining a search strategy in consultation with the GMC, the RAND study team then ran searches applying the agreed search terms and parameters. Following this stage, a researcher (LS) scanned the titles and abstracts of the sources identified for relevance to the research questions and study scope, before reviewing the shortlisted sources in full and analysing relevant content in a narrative synthesis, guided by the considerations outlined above. The search terms, inclusion criteria and databases searched are described in more detail in Appendix A, and the literature included in the review is presented in Appendix B.

1.4.2. Key Informant Interviews

Research interviews were conducted with three groups of stakeholders as presented in Table 1.2.30 The purpose of the interviews with academic experts was to expand upon and validate the emerging findings of the literature review as well as to clarify any areas of dispute. The interviews with GMC, SRA, NMC and defence and security personnel allowed for the elicitation of information regarding decision making challenges, tools and methods specific to these organisations. Interviews lasted approximately one hour each and were primarily conducted by telephone (17 by telephone; 1 in person).

29 The publication dates of relevant literature identified through snowballing and included in the final review ranged from 1896 (see Le Bon 1896) to 2016 (see Kahneman et al. 2016).
30 A full list of interviewees can be found in Appendix C.
An interview protocol was used to conduct these semi-structured interviews (see Appendix D). This guidance document was designed to help interviewers cover all the desired topics while allowing scope for flexibility, and was adjusted for each of the interviewee groups listed in Table 1.2. It was also designed to ensure that all topics of discussion were, as far as possible, covered with all participants.

Interview findings were categorised in an Excel spreadsheet in order to make it readily analysable for RAND researchers. Data capture categories included (but were not limited to): ‘types of decision made in interviewee’s organisation’, ‘decision making challenges’ and ‘tools, practices or methods to support fair decision making’. Capturing interview data in this way meant that the RAND study team could compare findings across different interviews and identify common findings and areas of divergence.

Table 1.2: Interview Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Purpose</th>
<th>Number of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMC</td>
<td>Engagement with GMC stakeholders enabled RAND to develop a better understanding of organisational tools and approaches used by the GMC to support fair decision making. This improved understanding of the GMC context and informed RAND’s approach to conducting the practitioner interviews.</td>
<td>3</td>
</tr>
<tr>
<td>Academics</td>
<td>The academic interviews were intended to expand upon and validate the emerging findings of the literature review as well as to clarify any diverging views or main areas of dispute in the domain. These discussions also allowed for the elicitation of information not available within the literature including, for example, information about decision making methods or tools under development that are specific to certain organisations.</td>
<td>5</td>
</tr>
<tr>
<td>SRA</td>
<td>Complemented by a search of open source information available on relevant company websites, the interviews with practitioners from comparator sectors enabled the RAND study team to identify transferrable lessons from other organisations for the GMC.</td>
<td>4</td>
</tr>
<tr>
<td>NMC</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Defence &amp; security</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Findings from the REA and the research interviews were then synthesised to form a more cohesive understanding, providing a basis from which we identified common decision making challenges and

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31 Semi-structured interviews combine the use of an interview protocol containing specific questions with flexibility to ask unplanned follow-up questions. By contrast, structured interviews follow an interview protocol with all interviewees asked exactly the same questions in the same order; while unstructured interviews consists of a free-flowing conversation on a given topic.
methods to address these. As presented in Chapter 4, the main results were summarised into general themes aligned with the research questions outlined in Section 1.3.

1.5. Structure of the Report

This report sets out the findings of the study. In addition to this introduction, this document contains three substantive chapters covering:

- Research insights on fair decision making (Chapter 2).
- Practical decision making tools and processes used in the comparator sectors (Chapter 3).
- Conclusions and implications for practice and research (Chapter 4).

Figure 1-1 presents an overview of the main chapters of the report.

Figure 1-1: Report Structure
2. Research Insights on Fair Decision Making

Drawing together the data collected through the literature review and interviews with academic experts, this chapter first maps the review findings before discussing academic definitions of ‘fair decision making’ from the literature review and interviews. It then provides an overview of biases and other factors that may influence decision making, as well as highlighting methods designed to strengthen decision making practices.

2.1. Mapping of Literature Review Findings

A total of 43 papers were reviewed in full and included in the review. These papers were selected from an initial total of 1,730 academic papers and grey literature published after 2005, identified through the final search strategy. A manual review of titles and abstracts of these 1,730 papers resulted in 40 papers selected for further in-depth review. A total of 9 of these papers were then cited in the final literature review, with the excluded papers being deemed outside the scope of the review and not relevant to the research questions listed in Section 1.3 once the full text was looked at. With the addition of a further 34 papers identified through snowballing, a total of 43 papers were included Table B.0.1 in Appendix B sets out the cited literature identified through the structured search and through snowballing.

The 43 papers included come from the UK, the US and Europe, and contains research on sectors including regulation and business, as well as cross-sector research on behavioural science. Much of the literature identified in the review related to decision making in for-profit and, to a much lesser extent, non-profit organisations. The applicability of this literature to the arena in which the GMC operates is necessarily limited, as priorities focused upon in considerations of decision making included matters such as accountability to shareholders, for example, which is not a concern of the GMC. Furthermore, this literature tended to focus on internal decision making processes that affect stakeholders within the organisation, rather than outward facing decisions that affect external stakeholders, including the general public. Lessons from this literature were synthesised with care to ensure that as far as possible only those that were likely to be relevant to the GMC were included in this review (see also Section 1.4.1).

This review includes both peer-reviewed publications and grey literature. The peer-reviewed literature relating to biases and other factors influencing individual decision makers, as well as to group decision making dynamics, has a particularly substantial body of evidence behind it. As would be expected, the grey literature included content that was more targeted and relevant for regulatory bodies such as the GMC, but was, on the whole, much more dependent on uncited research, common practice and anecdotal evidence. The relative strength of research findings is noted where these findings are referred to in this report.
2.2. Definitions of Fair Decision Making

Commentators have taken various approaches to defining decision making. In their study of decision quality and efficiency in three Swedish public authorities, for example, Allwood and Salo observe that decision making is ‘at least to some extent, domain dependent and socially intertwined’. Of particular relevance to this report is the authors’ focus on decision making within public authorities, which they describe as characterised by ‘the need to make a reasonable compromise between decision quality and decision efficiency’.

This report will use the definition provided by Donelan in his introduction to Good Decision making Practice in the Regulatory Arena, a synopsis of uncited research on decision making produced for regulatory practitioners. According to this study, decision making is defined as ‘the mental or cognitive processes resulting in the selection of a course of action among several alternative scenarios’ (p.4). While recognising that Donelan’s study is based on uncited research – raising questions concerning the overall rigour of the research – the RAND study team considered that the definition offered by Donelan describes the decision making process particularly effectively.

While the research brief outlined by the GMC concerned ‘fair’ decision making, this term was found to be absent, inconsistent or problematically defined in the literature and was furthermore interpreted in various ways by the academic interviewees. This may reflect the subjective nature of the term and the challenges inherent in measuring ‘fair outcomes’. Synonyms for ‘fair’ such as ‘good’ do not necessarily capture the nuance of what the GMC is seeking to understand more deeply and to demonstrate in its decision making.

The literature review identified an extensive body of legal research that examines procedural justice in the legal environment. Within this literature, studies tend to emphasise ‘consistency’, ‘accuracy’, ‘bias suppression’ and ‘representation’ as key indicators of procedural justice. Drawing on the literature reviewed and interviews conducted, the RAND study team extrapolated indicators of what constitutes ‘fairness’ in the GMC context in consultation with the GMC. Table 2.1 presents these indicators.

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32 Allwood & Salo (2014).
33 Donelan (2013).
34 See, for example, Barrett-Howard and Tyler (1986), Greenberg (1986); Sheppard and Lewicki (1987).
35 See, for example, Barrett-Howard and Tyler (1986); Sheppard and Lewicki (1987).
36 See, for example, Barrett-Howard and Tyler (1986).
37 See, for example, Houlden et al. (1978); Lind et al (1983); Tyler (1987).
These principles are important for ensuring the legitimacy of decisions, preserving the reputation capital of the decision making body and – of particular relevance to the GMC – minimising regulatory risk.

Notwithstanding the nuances in these differing conceptions of decision making, in a working paper calling for research on improvement strategies in decision making, Milkman et al. argue that ‘in a knowledge-based economy… a knowledge worker’s primary deliverable is a good decision’. It is therefore critical that individuals charged with making decisions are supported with appropriate processes and resources by their organisations to ensure that their decisions are fair, as demonstrated by objectivity, reliability, transparency, accountability and a basis in evidence. Factors affecting the delivery of fair decisions at the individual, group and organisational levels emerging from the literature review will be considered in Section 2.5 below.

2.3. Theories and Models of Decision Making

Decision Making Frameworks

As Akdere notes, numerous decision making theories have been developed by researchers, including multi-objective decision making theory, social decision making theory, statistical decision theory and affective decision making theory, yet there is still much that remains unknown about decision making and

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39 These indicators were mentioned in RAND Europe interviews with Roy Poses, Brown University, 17 November 2016; Andrew Edgar, University of Sydney, 25 October 2016; Robert Thomas, University of Manchester, 31 October 2016; and Dan Lovallo, University of Sydney Business School, 3 November 2016.

the application of decision making processes in the organisational context. Nevertheless, this literature review identified a number of decision making theories and models that may be helpful for practitioners in providing a framework for their approaches to decision making. Snowden & Boone, for example, set out the ‘Cynefin framework’ in the *Harvard Business Review*, a general management publication aimed at practitioners and featuring high-profile contributors from academia and business, which tends to rely upon uncited research. This is a conceptual tool which has been used by organisations working in high-risk environments and may be illuminating for organisations seeking to reflect on the settings in which decisions are made. Snowden & Boone identify four contexts for decision making, as summarised in Table 2.1 below. Based on engagement with the GMC, it is the RAND study team’s understanding that GMC decisions are likely to fall predominately into the first three categories.

Table 2.1: The Cynefin Framework

<table>
<thead>
<tr>
<th>Context</th>
<th>Characteristics</th>
<th>Approaches</th>
<th>Risks/Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Clear cause and effect relationships; right answers exist.</td>
<td>Best practices; delegation; communication.</td>
<td>Complacency; simplification; lack of critical thinking.</td>
</tr>
<tr>
<td>Complicated</td>
<td>Cause and effect can be discovered; expertise required; more than one right answer.</td>
<td>Sense, analyse, respond; expert panels; conflicting advice.</td>
<td>Analysis paralysis; overreliance on experts.</td>
</tr>
<tr>
<td>Complex</td>
<td>No right answers, but emergent and instructive patterns.</td>
<td>Probe, sense, respond; increased interaction and communication; ideas generation.</td>
<td>Tendency to rely on command-and-control; desire for accelerated resolution.</td>
</tr>
<tr>
<td>Chaotic</td>
<td>Cause and effect impossible to determine as they shift constantly.</td>
<td>Act, sense, respond; immediate action; clear, direct communication.</td>
<td>Overreliance on leader, missed opportunities.</td>
</tr>
</tbody>
</table>

**Decision Making Models**

A number of papers identified through the literature review make reference to ‘decision making models’, which can help conceptualise the steps an organisation and its personnel take to reach decisions. However, it is important to caution that these papers do not evaluate the effectiveness of these models – particularly in relation to ‘fairness’ – nor do they provide any insight into how these models were developed.

For example, Donelan makes reference to a ‘classical’ five-step approach to decision making:

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41 Akdere (2011).
42 Snowden & Boone (2007).
43 Donelan (2013).
1. Define the objective
2. Collect relevant information
3. Generate feasible options
4. Make the decision
5. Implement and evaluate.

Figure 2-2 presents a decision making practice approach developed by Donelan. While the steps in this graphic are apparently presented in a progressive fashion, it is clear that a number of these steps, for example, ‘evaluating any internal or external influences’ are not isolated steps but rather approaches that guide the entire decision making process.

**Figure 2-2: Good Decision Making Practice Approach for the Regulatory Professional**

The *Harvard Business Essentials Guide to Decision Making* contains the most instructive conceptualisation of the decision making process of the literature included in this review. While the guide does not make reference to evaluation of the model or offer a solid evidence basis for its claims, the depth of discussion contained in the guide at least provides readers with more opportunity to reflect on the applicability of these steps to their organisational needs.

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44 Donelan (2013).
Five steps are identified in this process:

1. **Establish a context for success:** This step involves creating an organisational environment in which good decisions can be made by ensuring that the ‘right people’ – by which the authors mean knowledgeable, experienced decision makers with relevant authority and a stake in the decision outcome – participate in the process. This step also entails creating a setting that encourages thoughtful deliberation and allows for healthy differences of opinion, which can only take place with the support of the organisation’s leadership.

2. **Frame the issue properly:** The authors of the guide define ‘framing’ as ‘the mental window through which we view a particular problem, situation or opportunity’, and state that framing the issue depends on the decision maker’s understanding of the relevant issues.46 The ‘frame’ for decision making – consisting of the norms, attitudes and values that individual decision makers bring to the decision making process – was also mentioned by an academic interviewee.47

3. **Generate alternatives:** This step relates to the options the decision maker must develop in deciding which course of action to pursue.

4. **Evaluate alternatives:** The decision maker must assess the feasibility, risks and implications of each of the decision options. The authors of the guide note at this stage that there are a number of analytical tools, including software, available to assist decision makers in their evaluation. These tools will be discussed further in Section 2.5.

5. **Choose the best alternative:** The authors of the guide suggest that while the right decision will ideally be clear, in many cases the choice may be made more difficult by missing information or differing personal preferences among the decision makers.

While this model is unlikely to represent all of the complexities of the decision making processes at the GMC or in any other organisation, it remains a useful framework within which to consider the factors influencing decision making and the tools designed to help ensure that decisions are fair. These concepts will be explored further in the sections below.

### 2.4. Factors that Influence Decision Making

This section will first discuss the individual factors influencing decision making processes and outcomes, before discussing the factors influencing decision making at the group and organisational levels.

#### 2.4.1. The Individual Level

A substantial body of research has been established on human information processing and decision making at the individual level. This research has been tested through a variety of methods, including laboratory experiments and fieldwork, and in numerous contexts, including government, criminal justice, medicine, economics and marketing. The literature focuses on factors that influence individual decision making and includes analysis of the heuristics, or mental shortcuts that can bias decision making in systematic ways; the competing pulls of emotion and rationality; motivation towards promotion or

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47 RAND Europe interview with Keith Hawkins, Oxford University, 17 October 2016.
Heuristics, Biases and Noise

The concept of heuristics was introduced by the cognitive scientist Herbert A. Simon and further developed by Amos Tversky & Daniel Kahneman, who argued that much human decision making under uncertainty is based on mental short cuts, or simple rules by which people may form judgements. In their seminal and highly-cited 1974 paper, ‘Judgement Under Certainty: Heuristics and Biases’, Tversky & Kahneman theorised that heuristic principles ‘reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations.’ Heuristics, Biases and Noise

However, cognitive biases can have a potentially negative influence on heuristics, leading to errors in decision making. This pressure on decision making can be further complicated by time constraints and become a decision making challenge, as mentioned by two academic interviewees.

In their 1974 paper, Tversky & Kahneman set out three examples of three heuristics: representativeness, availability and adjustment and anchoring, the existence and effect of which were tested in a number of experiments. Representative relates to the associations that people make when categorising things, which may be based on stereotypical thinking. In the example the authors provide, an individual is described as shy and withdrawn, but helpful to others; a list of possible occupations for this person is provided – salesman, pilot, librarian and so on – and the probability that the person is, for example, a librarian, is assessed by the extent to which they are representative of the stereotype of a person in that profession.

Availability occurs when the frequency or probability of something is assessed by the ease with which it may be brought to mind. For example, an individual may assess the risk of serious illness in a middle-aged person by recalling other such incidents among their social circle. Reliance on availability may lead to biases due to the retrievability of examples, their imaginability, or false correlations that people make between things that are in fact unrelated. Anchoring occurs when someone commences their analysis of a situation with a starting value – ‘the anchor’ – suggested to them, then adjusts their judgement in relation to that position. A common example in the literature on anchoring relates to negotiations for a used car, the final offer for which depends on whether the buyer was initially offered a high or low starting price.

The literature identified a number of other cognitive biases that may negatively impact on heuristic reasoning, and which decision makers must be vigilant in monitoring. Confirmation bias, for example, is present when an individual searches for and accepts information in line with their pre-existing belief or expectation or, by the same token, disregards information that contradicts it. An example of

50 RAND Europe interviews with Roy Poses, Brown University, 17 November 2016; Andrew Edgar, University of Sydney, 25 October 2016.
confirmation bias in medicine might be when a doctor examines a patient looking for evidence of a diagnosis that they have already reached, potentially missing signs of contradictory evidence. **Hindsight bias** leads decision makers to conclude that in retrospect, an event was predictable, despite having little or no objective basis for this belief. Kinderman, Murden and Scott, in their overview of the research on biases produced for the British Psychological Society, state that:

> [i]n the context of a medical error, the most significant psychological difference between those involved in a mishap and those who are called to investigate is knowledge of the outcome. Investigations and inquiries are tainted by knowledge of what happened, which highlights how difficult it is to prevent mistakes from happening again. It is difficult, once the event has occurred, to imagine what it must have been before.53

Other forms of cognitive biases include **framing**, which relates to the choice on how one positions a question at the outset of the decision making process, and the **fundamental attribution error**, also which may also be referred to as the correspondence bias or attribution effect.54 This occurs when one places an undue emphasis on a person’s character or background in understanding their behaviour in a certain context, rather than on the external factors that may have influenced them. In one of the experiments in Jones & Harris’ classic 1967 study, participants were asked to read essays with opposing views of Fidel Castro, and then rated attitudes of the writers towards Castro.55 Even when the participants were told that the authors had been directed to write the papers, they still tended to believe the writings reflected the author’s own personal views, and were thus unable to understand the influence of the situation on the author’s behaviour.

More recently, Kahneman et al. have presented the theory of ‘**noise**’, which they describe as ‘the chance variability of judgements’.56 This variability flows from factors irrelevant to the decision at hand, such as the weather, or the decision maker’s mood. The authors refer to uncited research that has suggested that ‘professionals often contradict their own prior judgements when given the same data on different occasions’, giving an example of pathologists who ‘made two assessments of the severity of biopsy results, [and] the correlation between their ratings was only 0.61 (out of a perfect 1.0), indicating that they made inconsistent diagnoses quite frequently.’57 The authors also note that while research on noise conforms to the wider evidence on the low reliability of professional judgement, most decision makers, and organisations, are unaware of its effect. They attribute this to the high confidence that experienced professionals typically have in their own judgement and their confidence in the intelligence of their colleagues.

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53 Kinderman, Murden & Scott (n.d., p.5).
55 Jones & Harris (1967).
56 Kahneman et al. (2016, p.40).
57 Kahneman et al. (2016, p.40).
Managing Heuristics, Biases and Noise

As Kinderman, Murden and Scott note, it is important not only to recognise the influence of cognitive biases, but to also move to address them systematically.\(^{58}\) They propose to do this through ‘systematic interventions designed to enhance scrutin\(\text{i}\)y, increase diversity, facilitate learning and challenge culture’, although they cite no evidence to support this position.\(^{59}\) However, a number of steps may be taken by the individual to manage these biases. Van Winkelen & McKenzie suggest improving access to information, and working to ensure that the information is itself free from bias.\(^{60}\) Donelan refers to reflection strategies for regulatory professionals including:

\[\text{[t]he use of ‘time-outs’ to review or re-evaluate new information received, and monitoring of intrinsic or extrinsic influences such as time pressure or formal organisational hierarchy decision making requirements, needs to be managed.}^{61}\]

In the context of noise, Kahneman et al. also emphasise instilling discipline in judgement through using similar methods as their colleagues to seek information and integrating this information into their decision making processes and conclusion.\(^{62}\) The authors also recommend participating in roundtables in which decision makers present and defend their opinions about a case to colleagues who have studied the case in advance. This process, they argue, provides an ‘audit’ of noise in decision making. However, the authors caution that while reducing biases and noise in decision making is extremely important, doing so is challenging and requires sustained vigilance from decision makers.

Personal characteristics

Much of the literature identified in this review considers the influence of personal characteristics in decision making. Indeed, some of the seminal theories and experiments in psychology and social sciences relate to individual decision making processes. Regulatory focus theory, formulated by E. Tory Higgins, presents two basic motivations or inclinations in an individual: promotion or prevention.\(^{63}\) A promotion focus results in a primary concern with advancement and other rewards. By contrast, prevention focus prioritises security and avoiding punishment. These foci may result in differing decision making strategies: an individual focused on promotion tends to strive towards ‘hits’ and gains, while an individual focused on prevention works towards avoiding false positives, and ensuring correct rejections.\(^{64}\) As a result, the type of information sought and used by decision makers may be affected by regulatory focus.\(^{65}\) Other research has suggested that decision makers with a promotion focus tend to adopt more risky, positive responses, while those with a prevention focus tend to give more conservative, negative responses to

\(^{58}\) Kinderman, Murden & Scott (n.d.).
\(^{59}\) Kinderman, Murden & Scott (n.d., p.5).
\(^{60}\) Van Winkelen & McKenzie (2010).
\(^{61}\) Donelan (2013, p.5).
\(^{62}\) Kahneman et al. (2016)
\(^{63}\) Higgins (1997).
\(^{64}\) Burtsher & Meyer (2014).
\(^{65}\) Higgins (1999).
situations.\textsuperscript{66} Friedman \& Forster also found that individuals with a promotion focus tend to be more creative in their thinking.\textsuperscript{67} Relatedly, regulatory focus may also play a role in decision making at the group level, with Sassenberg \& Woltin, among other researchers, investigating the application of regulatory focus theory to teams.\textsuperscript{68}

In their \textbf{two-process theory of reasoning}, Stanovich \& West built on an enormous body of research to coin the terms ‘System 1’ and ‘System 2’, which denote differences in the roles of emotion and rationality in individuals’ thinking.\textsuperscript{69} System 1 reasoning is ‘characterized as automatic, largely unconscious, and relatively undemanding of computational capacity’, and is typically intuitive, fast and emotional.\textsuperscript{70} System 2 reasoning, by contrast, is slower, conscious, more analytic, rule-based and controlled. Kahneman expanded on System 1 and 2 reasoning in his book \textit{Thinking Fast and Slow}, linking the theory with his previous work on heuristics and biases and other research on human behaviour.\textsuperscript{71} He conducts a number of experiments demonstrating the differences between the systems, and how individuals guided by one system or another may reach different results in their decision making, even when they have been given the same inputs. Stanovich \& West suggest that better decisions may be made by shifting decision makers from System 1 to System 2 thinking, a thesis that underlies the push in organisations towards automated processes and artificial intelligence, tools that minimise or remove human judgement from decision making.\textsuperscript{72} This approach is not without risk: human oversight remains essential for most of the decision making tasks of an organisation.

A body of research has also been established on the influence that an individual’s level of \textbf{experience} in decision making has on decision outcomes.\textsuperscript{73} Much of this research draws links to the cognitive biases and heuristics outlined above; for example, an understanding of representativeness may have emerged from previous experience with the kind of person or thing being analysed. Likewise, ‘sunk costs’ – prior investments of money, effort of time – may lead decision makers to continue irrationally with the same course of action rather than cut losses and change their approach.\textsuperscript{74} Alternatively, in Taylor’s 1975 study, the author investigated differences in managerial decision making performance in relation to age and decision making experience.\textsuperscript{75} In this study, age was found to have a stronger influence on decision making than prior experience. A related decision making influencer identified by interviewees relates to the level of knowledge and understanding held by the individuals responsible.\textsuperscript{76}

\begin{itemize}
\item \textsuperscript{66} Crowe \& Higgins (1997).
\item \textsuperscript{67} Friedman \& Förster (2001).
\item \textsuperscript{68} Sassenberg \& Woltin (2008).
\item \textsuperscript{69} Stanovich \& West (2000).
\item \textsuperscript{70} Stanovich \& West (2000, p.658).
\item \textsuperscript{71} Kahneman (2011).
\item \textsuperscript{72} Stanovich \& West (2000).
\item \textsuperscript{73} The importance of decision making experience was also highlighted in the RAND Europe interview with Andrew Edgar, University of Sydney, 25 October 2016.
\item \textsuperscript{74} Knox \& Inkster (1968).
\item \textsuperscript{75} Taylor (1975).
\item \textsuperscript{76} RAND Europe interview with Roy Poses, Brown University, 17 November 2016.
\end{itemize}
In a similar way, Leblebici & Salancik investigated the **amounts and types of information** used by decision makers in assessing ‘decision targets’ – in their study, loan applicants – in relation to the level of uncertainty the decision maker feels about the decision. They found that decision makers who felt highly certain about a decision target were less likely to seek out and analyse information that is not routinely or formally required. Research has also suggested that decision makers who follow standardised decision rules are less likely to engage in active cognitive processing and instead rely on more automatic processing.

The efficacy of decision rules as a tool will be further considered in Section 2.5, along with other strategies to target fair decision making processes and outcomes on the individual level.

According to interviewees, the way that an individual arrives at a decision can be influenced by the **quality and quantity of information** available to them. One challenge concerns the high availability of information available to decision makers through the Internet, to the extent to which decision makers are overwhelmed with information and it becomes difficult to identify the most relevant tools. According to another interviewee, a higher volume of information does not necessarily lead to better decision making; this information must be interpreted appropriately, with the wider context taken into account.

### 2.4.2. The Group Level

Scientific research on group dynamics can be traced back to the 1890s. This field of research has considered the circumstances in which group decision making may be more effective than individual decision making, and also explored the potential hazards of group decision making. In this regard, Irving Janis pioneered research into ‘groupthink’, which describes a mode of thinking that may develop when members of a group seek cohesion and unanimity over the expression of individual critical thinking. This theory has been tested by countless experiments on group norms, and has become widely accepted among researchers; Rose provides a useful and concise overview of the major studies and schools of thought on group think over the past four decades.

Kinderman et al. also produced an overview of research published on the neurological component of group dynamics, stating:

> Modern neuroscience suggests we possess powerful mechanisms to encourage collective behaviour and avoid being rejected. When a person deviates from an opinion held by the wider group, the brain evaluates it as an error and consequently adjusts behaviour. The brain creates a strong incentive for ‘toeing the line’ through the reward centres of the brain and at the same time it experiences rejection from a group in a similar way to physical pain. As this is at a predominantly

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80 RAND Europe interview with Andrew Edgar, University of Sydney, 25 October 2016.
81 Le Bon (1896).
82 Janis (1972).
83 Rose (2011).
subconscious level, people are often unaware that they are altering their behaviour or being influenced by others.\textsuperscript{84} The literature also offers instruction on how the harmful effects of groupthink may be mitigated. For example, Phillips & Loyd found that surface-level or visible diversity in a group, such as ethnicity, gender and physical ability, may be beneficial in decision making ‘because the mere presence of surface-level diversity reduces expectations of similarity, thereby improving individuals’ likelihood of expressing dissenting perspectives’.\textsuperscript{85} Most of the tools and approaches to ensuring that group decision making processes and outcomes are fair occur at the organisational level, and will be examined in the following section.

2.4.3. The Organisational Level

In the introduction to their study ‘Controlling Decision Making Practice in Organizations’, which examined a financial institution’s efforts to standardise and control decision making across their organisation, Sutcliffe & McNamara state that:

\textit{...decision maker behaviour is situated and is not simply a function of individual choice. Rather, in organizational settings decision makers are subject to a hierarchy of influences that affect the decision processes they use and their resulting decision choices.}\textsuperscript{86}

Furthermore, as McKenzie & van Winkelen note, decision makers within organisations require an ever wider variety of knowledge services, interact with increasingly demanding and sophisticated stakeholders, and are subjected to more varied and complicated intra-organisational relationships, and must by supported by their organisation accordingly.\textsuperscript{87} Given the importance of the organisation to decision making, this section will present the theories and evidence on how the leadership, culture and structure influence the fairness, or perception of fairness, of their decisions.

Leadership

A number of papers identified in the review consider the role of leadership in the decisions made in organisations. In his paper ‘What Makes a Leader?’ Goleman synthesises his body of work and contends that emotional intelligence in this context is the most important element of leadership. He defines this using five components: (1) self-awareness, which is demonstrated through a deep understanding of one’s emotions, needs, strengths and weaknesses, and honesty with themselves and others; (2) self-regulation, which relates to the control one exerts over emotional impulses; (3) motivation, which is demonstrated by passion, energy and persistence; (4) empathy, or recognising emotions in others and responding accordingly; and (5) social skill, or how one manages relationships and builds networks.\textsuperscript{88}

\textsuperscript{84} Kinderman, Murden & Scott (2016, p.3).


\textsuperscript{86} Sutcliffe & McNamara (2001, p.484).

\textsuperscript{87} McKenzie & van Winkelen (2008).

\textsuperscript{88} Goleman (1998).
In Hess & Bacigalupo’s paper ‘Applying Emotional Intelligence Skills to Leadership and Decision Making’, the authors argue that ‘the consideration of issues through the lens of emotional intelligence can enhance the quality of decisions and decision making processes’ within an organisation. Importantly, Goleman argues through his research that emotional awareness is not simply innate, but is a skill that may be developed and improved. However, emotional intelligence research has also been subject to a range of criticisms regarding its concept, theory and measurement.

The literature also explores whether diverging opinions among staff are positive or negative for decision making. On the one hand, one interviewee suggested that professional conflicts of interest can be regarded as risk factors for decision making. On the other hand, Snowden & Boone suggest that interactive, democratic and multidirectional communication can facilitate decision making in complex contexts. According to this research, dissent and diversity are important as they ‘encourage the emergence of well-forged patterns and ideas’. A ‘ritual dissent’ approach is a mode of encouraging debate in decision making, whereby parallel teams work on the same problem then take turns presenting their conclusions to another group, before listening carefully to open feedback. This process is said to help develop employees who have experience in speaking honestly, listening with discipline, and not taking criticism personally. Finally, Snowden & Boone argue that:

… leaders need to focus on creating an environment from which good things can emerge, rather than trying to bring about predetermined results and possibly missing opportunities that arise unexpectedly.

Culture

The culture of an organisation in relation to decision making processes and outcomes naturally flows from its leadership. The debate and dissent referred to above reflect a culture of learning and transparency, in which individuals feel empowered to raise concerns and speak out to prevent or act on errors. Kinderman, Murden & Scott discuss information sharing and ‘taking a diagnostic approach to identify patterns of what is going wrong and how to improve. A safe, open and transparent culture encourages individual learning and development, and also allows groups to be innovative and challenge each other’. In particular, this kind of organisational culture offers protection against the dangers of groupthink and entrained thinking.

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91 See, for example, Waterhouse (2006) and Conte (2005).
92 RAND Europe interview with Roy Poses, Brown University, 17 November 2016.
93 Snowden & Boone (2007).
94 Snowden & Boone (2007, p.6).
95 Organisational culture represents the collective values, beliefs and principles of organisational members and is a product of such factors as strategy, type of employees, management style, and organisational values (Needle, 2004).
96 Kinderman, Murden & Scott (n.d., p.6).
Other literature makes reference to learning strategies such as staff training, for example, strategies to reduce cognitive biases,97 and the importance of providing feedback to employees on their work, tracking the results of and auditing decisions and maintaining an up-to-date knowledge base that employees may access to inform their decision making.98 Recruitment and human resources are also critical elements of the culture of an organisation and decision outcomes. For example, does the organisation recruit for decision makers who are motivated by prevention or promotion? Does the organisation look for employees who are intuitive and emotional in their thinking, or rather controlled and rational? Furthermore, how are these individual characteristics managed or encouraged once they have joined the organisation, and how are employees supported by the organisation in the different decisions that they need to make in their role?

Structure

The structure of an organisation is intimately connected to the leadership and culture of the organisation. It is perhaps for this reason that the links between ‘organisational structure’ and decision making by employees are not drawn out explicitly in the literature identified in this review.

While Akdere notes that ‘changes in the organisational structures – from silos to integrated and interactive units – also contribute to the increased emphasis on engaging in decision making process’.99 no evidence is cited to support this claim.

2.5. Decision Making Tools, Practices and Processes

In order to address and manage the factors outlined above that may influence decision making at the individual, group and organisational levels, a number of decision making tools, practices and processes have been developed and were noted in the literature and by academic interviewees. While rigorous evaluation of the impact of these tools, practices and processes on fair decision making is often lacking, some commentary may be helpful to organisations striving to reach this goal.

A common type of tool identified in the research aims to ensure consistency in decision making. Academic interviewees noted the importance of providing standardised training and guidance for decision makers – such as the consistency guidelines developed by the Health and Safety Executive – to help ensure that decisions are made in a comparable way within an organisation.100 Sutcliffe & McNamara offer a concise overview of the research on decision rules, which organisations use to standardise decision making within and across organisational units, and to raise the consistency of decision evaluations in the longer-term. They state:

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97 See for example Slovic & Fischhoff (1977).
98 See for example McInerney (2002).
100 RAND Europe interviews with Keith Hawkins, Oxford University, 17 October 2016; with Roy Poses, Brown University, 17 November 2016; and with Andrew Edgar, University of Sydney, 25 October 2016.
Fundamentally, decision rules are designed to codify organisational learning and constrain the attention of the decision makers so that they ignore extraneous information that simply adds noise to their decision evaluation processes.\textsuperscript{101} However, Sutcliffe & McNamara caution that the use of decision rules may lead decision makers to become scripted in their thinking, and ignore or overlook information that suggests significant variations in the decision landscape.\textsuperscript{102} The balance that organisations must strike in using structured or automated decision making tools to remove unwanted variability in decisions, yet ensure that human judgement and critical thinking are still engaged, is a concept that is explored in a number of papers included in this review.

Kahneman et al. reflect on research conducted over the past 60 years on the use of \textit{algorithms} that use data related to the case to generate a decision or prediction.\textsuperscript{103} The decision making contexts explored in this body of research include predicting the success of graduate students, and the life expectancy of cancer patients. Kahneman et al. found that algorithms were more accurate than professional judgements in approximately half the studies examined, and equally accurate in most of the other studies.\textsuperscript{104} The authors also consider the use of algorithms as an information source for professionals who make the ultimate decision. They cite a study on the Public Safety Assessment, a formula that judges in the US use to decide whether a criminal defendant might be released safely from custody before their trial. In Kentucky, it was reported that in the first six months of its use, the rate of crime committed by defendants who had been released before trial dropped 15 per cent, while the percentage of defendants given pre-trial release increased.

However, Kahneman et al. add a number of caveats in relation to use of algorithms for decision making noting, for example, that algorithms will not be practical in many situations. The application of a rule may not be feasible when inputs are idiosyncratic or hard to code in a consistent format. Algorithms are also less likely to be useful for judgements or decisions that involve multiple dimensions or depend on negotiation with another party. Even when an algorithmic solution is available in principle, organisational considerations sometimes prevent implementation.\textsuperscript{105}

In addition, the authors note that people must retain the ultimate control over the algorithms, with the authority to monitor, adjust and override the algorithm where necessary. Furthermore, they argue, human decision makers must decide how to action the algorithms’ outputs. Computation in decision making has since its early inception been linked to research on heuristics\textsuperscript{106} as explored in Section 1.2.1 of this report; relying solely on these devices and approaches without human oversight and discretion is a risk that no research validates.

\textsuperscript{101} Sutcliffe & McNamara (2001, p.488).
\textsuperscript{102} Sutcliffe & McNamara (2001, p.488).
\textsuperscript{103} Kahneman et al. (2016).
\textsuperscript{104} Kahneman et al. (2016).
\textsuperscript{105} Kahneman et al. (2016, p.44).
\textsuperscript{106} Simon et al. (1986).
Reflecting this debate in the literature, the evidence from academic interviews concerning algorithms and automated decision making was also mixed. While one interviewee noted that automating decision making processes could remove a lot of the noise that adversely affects decision making, another interviewee suggested that it is more difficult to apply discretionary judgement through the mechanical application of rules. According to this reasoning, decision outcomes are likely to be of a higher quality if it is explained how the final decision was reached and how decision makers’ discretion was applied.

As noted in Section 2.4.3, recruitment and human resources are important aspects of organisational culture and decision outcomes. According to one interviewee, ‘ethics-focused recruitment’ is an important way of ensuring that an organisation hires individuals with an inherent understanding of fair decision making. The importance of individual competence was highlighted by another interviewee, who said, ‘a lot of the quality in decision making comes down to how good the people are who make the decision and how they assess the available evidence. Do they always reject certain types of evidence, or do they always accept it without questioning? It is important for decision makers to reflect on how they can improve their processes’.

A common theme that emerged from the research relates to the importance of independent, objective decision making tools. One interviewee cited the example of Google’s recruitment process when explaining the importance of objective decision making. As part of this process, three Google employees interview the applicant independently in order to avoid any kind of biased assessment and to reduce any noise affecting the decision. In a similar way, another interviewee mentioned that fair decision making practices can be strengthened by establishing an independent panel to review decisions made by others in the organisation.

Decision trees are also used in many organisations, and are closely tied to decision rules and algorithms. They are diagrams that contain nodes representing options at each step of the decision making process, where each branch that flows from the node represents the outcome of each option. While decision trees are referred to in the literature as a commonly used tool, this review did not locate any research relating to its effect on decision-fairness in organisations.

Knowledge maps are also used by organisations as a tool for presenting the location of information within the organisation. These maps allow people quickly to access expertise to inform their decision making. This tool may be particularly helpful to map both essential knowledge and knowledge at risk of being lost with staff turnover, allowing the organisation to ensure resilience and continuity of institutional knowledge. As with many decision making tools, knowledge mapping software may be used for more advanced modelling.

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107 RAND Europe interview with Dan Lovallo, University of Sydney Business School, 3 November 2016.
108 RAND Europe interview with Robert Thomas, University of Manchester, 31 October 2016.
109 RAND Europe interview with Keith Hawkins, Oxford University, 17 October 2016.
110 RAND Europe interview with Robert Thomas, University of Manchester, 31 October 2016. See also Schön (1983).
111 RAND Europe interview with Dan Lovallo, University of Sydney Business School, 3 November 2016
112 RAND Europe interview with Keith Hawkins, Oxford University, 17 October 2016.
113 Gordon (2000).
Phillips presents the findings of a study on the application of decision conferencing, a tool that may assist groups in reaching constructive resolution to decision making challenges. Decision conferencing brings together the key actors, under the guidance of an impartial facilitator, who work together to develop a decision analysis model of their perspectives on the case—a ‘tool for thinking’. The role of the facilitator is to assist in the development of the model and explore the results, without an expectation of producing a ‘right’ answer. Participants are encouraged to raise concerns and also be open to exploring new insights and challenge their intuitions. As a result of this activity, in Phillips’ analysis, participants in decision conferencing ‘develop a shared understanding of the issues, generate a sense of common purpose, and gain commitment to the way forward.’

2.6. Summary of Key Findings

The academic theories presented in this chapter provide a framework for organisations to reflect on decision making influencers, as well as tools to address these challenges. At the individual level, the RAND study team’s analysis found that heuristic thinking may ensure fast, efficient decision making but that decision makers must be mindful of the potential influence of cognitive biases, noise and individuals’ personal characteristics on the fairness of their decisions. Strategies identified to manage individual influencers include creating opportunities for reflection, seeking out and analysing relevant sources of information, and inviting constructive challenge from colleagues on decisions.

Most of the tools, practices and processes to support fair decision making were identified at the organisational level. The research presented in this chapter highlighted several factors that can influence organisational decision making: strong leadership and demonstration of emotional intelligence; an open and transparent organisational culture; and a clearly defined organisational structure. At the group level, the analysis found that decision making can be influenced by ‘groupthink’ and the desire to conform. While conflicts of interest can create challenges in reaching decisions, fostering engagement in critical thinking can also lead to fairer decision making.

Finally, this chapter identified a number of tools available to support fair decision making, including decision rules, algorithms, training, knowledge maps, decision trees and decision conferencing. These tools and practices are presented in Table 2.2 below, along with a description of their advantages and disadvantages. In applying these tools, it appears that organisations should strike a balance between ensuring that decision making processes are as consistent as possible, while also ensuring that decision making draws on discretionary human judgement and critical thinking.

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## Table 2.2: Decision Making Tools, Policies and Practices

<table>
<thead>
<tr>
<th>Tool, Policy or Practice</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decision rules</strong></td>
<td>Standardise decision making within and across organisational units.</td>
<td>May lead decision makers to become scripted in their thinking, and ignore or overlook information that suggests significant variations in the decision landscape.</td>
</tr>
<tr>
<td></td>
<td>Raise the consistency of decision evaluations in the longer-term.</td>
<td></td>
</tr>
<tr>
<td><strong>Algorithms and artificial Intelligence</strong></td>
<td>Have been found to be more accurate than professional judgements in approximately half the studies examined by Kahneman et al., and equally accurate in most of the other studies examined.</td>
<td>May not be practical for all decisions.</td>
</tr>
<tr>
<td></td>
<td>More cost-effective than human decision makers.</td>
<td>Inputs may be idiosyncratic or hard to code in a consistent format.</td>
</tr>
<tr>
<td></td>
<td>Can offer an information source for professionals who make the ultimate decision.</td>
<td>Less likely to be useful for judgements or decisions that involve multiple dimensions or depend on negotiation with another party.</td>
</tr>
<tr>
<td><strong>Decision trees</strong></td>
<td>Offer structure and consistency in decision making.</td>
<td>As with all automated decision making tools, requires human discretion.</td>
</tr>
<tr>
<td><strong>Knowledge maps</strong></td>
<td>Allow people to quickly access expertise to inform their decision making.</td>
<td>Not always applicable.</td>
</tr>
<tr>
<td></td>
<td>Map essential knowledge and knowledge at risk of being lost with staff turnover, allowing the organisation to ensure resilience and continuity of institutional knowledge.</td>
<td></td>
</tr>
<tr>
<td><strong>Decision conferencing</strong></td>
<td>May assist groups in reaching constructive resolution to decision making challenges.</td>
<td>May be time-consuming and resource intensive.</td>
</tr>
<tr>
<td></td>
<td>Participants may develop a shared understanding of the issues, generate a sense of common purpose, and gain commitment to the way forward.</td>
<td></td>
</tr>
</tbody>
</table>
This chapter provides an overview of the decision making methods used by organisations that make complex, high-impact decisions. Following a brief outline of how these comparator organisations were selected, a descriptive overview of each comparator organisation is provided before summarising the challenges facing decision makers and the tools available to address these obstacles.

### 3.1. Comparator Sectors and Organisations

Comparator organisations involved in high-stakes decisions were selected in order to develop a better understanding of the decision making tools, practices and processes used in institutions other than the GMC. As described in more detail in Chapter 1, comparator organisations were drawn from three sectors:

- **Legal sector**: Solicitors Regulation Authority (SRA).
- **Healthcare sector**: Nursing and Midwifery Council (NMC).
- **Security and defence sector**: various: UK Ministry of Defence, British Army, College of Policing, Metropolitan Police Service, Management of Risk in Law Enforcement (MoRiLE).

The NMC was selected on the basis that – like the GMC – it operates in the health domain, faces common challenges, has a similar organisational structure, and adheres to the same regulations. While operating in a different sector, the SRA was included in our analysis because of its comparable responsibilities regarding registration and the development of standards. Like the SRA, comparator organisations in security and defence were selected as it was considered that focusing on sectors outside healthcare could help identify a greater range of tools and practices.116

As described in more detail in Section 1.4, research interviews were conducted with representatives from these organisations (SRA: n=4, NMC: n=2, security and defence: n=4). Complemented by a search of open source information available on relevant company websites, the interviews with these practitioners helped develop a better understanding of organisational methods and approaches used to support fair decision making. These decision making tools, processes and practices are outlined in the following sections.

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116 For an expanded description of the comparator sectors and rationale for inclusion, please refer to Table 1.1 in Section 1.2.
3.2. Solicitors Regulation Authority

3.2.1. Overview

The Solicitors Regulation Authority (SRA) is the independent regulatory body for solicitors and law firms in England and Wales. Created in 2007 in response to the Legal Services Act 2007, it is overseen by the Legal Services Board, whose main role is to ensure that the approved regulators observe the highest standards of competence, conduct and services. In practice, this means ensuring that the regulators have robust procedures, training programmes and measures in place. The Legal Ombudsman also addresses complaints from the public about legal services.

Despite its limited geographic jurisdiction, the SRA has a wider remit than many other regulators in the legal and healthcare sectors. As well as UK solicitors, European lawyers and foreign registered lawyers carrying out activities in England and Wales, the SRA also regulates businesses and firms providing legal services in England and Wales and employees and individuals working in them. The wide range of decisions for which the SRA is responsible has led the organisation to put in place numerous measures to ensure decision making consistency and quality across the organisation.

The SRA is responsible for the following functions:

- **Developing and setting standards** for the legal profession in England and Wales, both at the individual and firm levels. These standards are available through the SRA’s website, as well as the Solicitors Handbook which contains *inter alia* the principles and rules of conduct and accounting.
- **Maintaining a register** of UK solicitors and foreign lawyers practising in England and Wales.
- **Authorising legal businesses and approving managers and owners**, as well as withdrawing these practising rights and/or imposing conditions on registrants as appropriate.
- **Ensuring standards of practice and rules of conduct are observed** by the registrants (both individuals and firms) and investigating concerns about incompliance.
- **Addressing complaints against solicitors and firms** and taking action if it is deemed that regulatory requirements have been breached. Disciplinary action can involve establishing pecuniary sanctions, withdrawing a registrant’s practising rights, and imposing conditions to practise. For more serious offences, the SRA may refer the case to an independent tribunal – the Solicitors Disciplinary Tribunal – or take it forward to criminal prosecution.

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117 Together with the Solicitors Regulation Authority, the Legal Services Act 2007 approved the following regulators: Bar Standards Board (barristers), CILEx Regulation (legal executives), Council for Licensed Conveyancers (licensed conveyancers), Intellectual Property Regulation Board (patent attorney and trade mark attorneys), Cost Lawyers Standards Board (cost lawyers), Master of the Faculties (notaries), and the Institute of Chartered Accountants in England and Wales (chartered accountants).

118 As of October 2016 the figures are as follows: practising solicitors (139,313), registered European lawyers (627), exempt European Lawyers (2,827), and registered foreign lawyers (2,337). Source: Solicitors Regulation Authority’s website.

119 There are 138,063 registered solicitors. See SRA (2016).

120 The SRA only sees cases of incompliance with the regulatory requirements. Complaints about poor services are dealt with by the Legal Services Ombudsman.
• **Ensuring quality of education and training** in England and Wales. To do this, the SRA sets standards for legal education and training and monitors relevant institutions.

• **Managing a compensation fund** through which payments are administered to individuals or businesses that have suffered a loss as a result of an individual or firm regulated by the SRA.

In terms of internal organisation, the SRA consists of the following bodies:

• **The Board**, which comprises 15 members (7 solicitors and 8 lay members) and which is led by the Chair. The mission of the Board is to set the strategy of the SRA and to hold the Executive accountable for the management and performance of the organisation.

• **Four Committees**, which support the Board in the following areas: Finance and Audit; Policy; Equality, Diversity and Inclusion; and People Strategy.

• **The Executive**, which manages the SRA and answers to the Board. The Executive employs over 600 people and is led by a Chief Executive and a senior management team composed of six members responsible for the following areas: Strategic Planning and Performance; Operations and Quality; External Affairs; Case Direction; General Counsel functions; and Policy.

### 3.2.2. Decision Making Context and Challenges

SRA decisions are primarily made by the Executive; namely by the Operations and Quality department staff that employs around 450 people. Within the Operations and Quality department, decisions are delegated to different teams acting in the various areas of competence within the SRA (e.g. interventions, disciplinary, sanctions).

Decisions are assigned to staff (‘authorised officers’) of a higher or lower rank depending on the level of risk involved, with more serious matters assigned to a panel of independent appointed adjudicators. For example, an authorisation of an individual would be dealt with by an authorisation officer, the registration of a business structure would be assigned to a manager, and the decision to intervene in a firm’s practice would be made by a panel of adjudicators. SRA interviewees explained that the internal decision making model is flexible; the seriousness of a decision is first assessed before determining which procedure to follow.

Within the SRA, the number of decisions taken between 2015 and 2016 is as follows:121

- 1,516 applications for the compensation fund have been processed
- 872 new members have been authorised
- 129 internal sanctions have been imposed
- 171 tribunal referral decisions have been finalised
- 37 interventions have been implemented in firms to seize money and documents.

Interviews with SRA personnel highlighted the main challenges facing SRA decision makers:

• **Ensuring consistency across the organisation**. The large size of the SRA and the wide range of decisions made within it can create challenges for ensuring consistency in decision making across the

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121 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
organisation. A set of tools, described in more detail in Section 3.2.3, have been put in place to address this concern.  

- **Recording decisions routinely.** Although the SRA has an IT system in which decision makers record key decisions and information regarding cases, the majority of the SRA’s work is paper-based at present and it is difficult to ensure that decisions are being captured effectively.

- **Keeping pace with external changes.** SRA processes, standards and training programmes need to keep up to date with changes to the external legal and regulatory environment affecting the profession. These changes need to be reflected not only in the SRA’s internal processes but also in external guidance issued to registered professionals.

- **Avoiding bias in decision making.** Another challenge concerns the need to ensure that decision makers collect and process evidence effectively, avoiding emotion or bias in the decision making process.

- **Managing the high volume of decisions.** Given the heavy workload for SRA decision makers, it can be difficult to assure the quality of all decisions made. As described in Section 3.2.3, the SRA administers a set of processes and tools to address this issue.

### 3.2.3. Decision Making Tools, Practices and Processes in the SRA

The SRA applies a number of tools and processes to promote robust decision making across the organisation.

#### Scheduled Delegation of Decisions

Under the SRA ‘schedule of delegation’, different types of decisions are clearly attributed to the various areas and departments of the Executive, and it is clearly specified which individuals or departments have the competence to make each decision as well as what behaviour is expected.

#### Supervision by Technical Advisors

New SRA decision makers work under the supervision of technical advisors until it is considered that they have reached a satisfactory level of competency. Decisions on serious matters are also overseen by technical advisors and – in particularly serious cases – result in the imposing of sanctions by a legal team. As an interviewee from the SRA put it, ‘the more serious the decision is, the more overseen it is’.

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122 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
123 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
124 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016, 22 December 2016.
125 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
126 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
127 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
Competency Assessments

Competency assessments are conducted in order to ensure that SRA personnel are capable of making decisions effectively. The SRA has clearly defined the necessary technical competences for making various types of regulatory decisions, and assesses individuals against these competences.128

These assessments are applied not only to new SRA personnel during recruitment and induction, but to everyone within the organisation. This practice is particularly important when an individual changes roles within the organisation, as it facilitates the identification of capability gaps and of training and support needs.129

Technical Training Coordinator

Over the last year, the SRA has established a central ‘Technical Coordinator’ role. This role involves developing technical training tailored to the needs of different departments and embedding technical competences within these training programmes. The Technical Coordinator sits within the central Quality Assurance unit and works across departments.130

Training

Within the SRA, training is administered across a number of areas. For example, technical training involves ensuring that personnel are informed about new regulations affecting authorisation decisions. Other types of training include soft-skills training, which focuses on how authorisation officers can manage their work and communicate with colleagues to make fair decisions.131

To ensure consistency of decision making across the organisation, all staff members follow a two-day induction session when they first join, which includes a module on basic legal training covering the principles of decision making.132

Further training is developed and delivered to address gaps identified through the competency assessments and provided either internally or externally. The General Counsel is responsible for ensuring that the legal training administered across the organisation is up to date.133

Evidence-based decision training is another type of training that is delivered externally in order to raise awareness of decision biases and to improve the way that personnel communicate decisions. The SRA is currently reviewing all training programmes across the organisation, and the prospect of providing evidence-based decision training on a more regular basis is under discussion.134

Over the last year, the SRA has established a central ‘Technical Coordinator’ role. This role involves developing technical training tailored to the needs of different departments and embedding technical

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128 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
129 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
130 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
131 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
132 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
133 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
134 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
competences within these training programmes. The Technical Coordinator sits within the central Quality Assurance unit and works across departments.135

Audit
The SRA has an internal audit system whereby sample decisions across the Operations team are audited by a central team. This audit team specifically looks at the decision making procedure and outcomes in order to assess whether the decision under assessment was proper, correct and evidence-based.136

Technical Directory
Authorising officers can refer to a catalogue of documented procedures that outlines the steps required to take various types of decision. Within the SRA, a technical directory of case studies has been compiled so that personnel can draw on specific examples of decisions to inform their own decision making processes.137

Case Direction Meetings
Case direction meetings provide an opportunity for operations staff to discuss their cases and decision making. Case direction meetings within individual teams are held on a weekly basis, while case direction meetings across departments occur monthly.138

Guideline Reviews
Within the SRA, decision making guidelines are periodically reviewed in order to ensure consistency across the organisation. This is reportedly a lengthy and complex process as it involves inputs from individuals from different teams.139 Nonetheless, it is said to promote shared understanding and awareness of activities and challenges encountered in other parts of the organisation. Revisions to the guidance on specific SRA regulatory decisions are published on the website. This is following a large-scale consultation on the ‘question of trust’. This will also feed into the enforcement strategy that will be the basis of consultation in Summer 2017.

Decision Document Templates
To avoid inconsistencies across areas in which the SRA makes decisions, decision makers work with a suite of document templates to ensure that a consistent style and a similar way of thinking is adopted when drafting decision documents.

Automated Decision Making
At present, the only procedure that can be authorised online relates to the practising certificate application. To deal with the high volume of applications, the SRA has put an automated system in place

135 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
136 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
137 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
138 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
139 RAND Europe interviews with anonymous personnel, SRA, 5 December 2016.
to carry out an initial assessment of certain information, for example, examination results, before SRA personnel can review the applications that have been sifted. This IT system is also designed to ensure that all relevant sections are completed in the application form.140

Internal Knowledge Management
All SRA staff members have access to an internal knowledge management platform, where they can find decision making guidance. In addition, the SRA recently launched an internal blog where new legislation or other developments affecting the work of the SRA are explained and discussed. This allows decision makers to keep up to date with the latest external changes in the legislative and regulatory environment.

Decision Making Framework
The SRA has established a common framework for all decisions, irrespective of their type. The decision making framework covers several common principles that should be observed by all decision makers, such as proportionality, fairness, quality and consideration.

Horizon Scanning
The SRA is concerned with keeping up to date with legislative, economic and policy changes affecting their operations. To do this, a group of experts conduct research focusing on a wide range of issues in the market and the legal environment affecting the work of the SRA. The resulting research findings inform decision making and can lead to changes made to organisational processes.

Transparent Decision Making
Within the SRA, transparency is an important decision making principle. For example, the SRA website publishes details of the Agency’s decision procedures and adjudication so that its customers can better understand the decision making process.141 To promote accountable and transparent decision making, the SRA also publishes a number of its decisions.142

Appeals and Reconsideration
The SRA has a comprehensive appeals process in place. If an applicant wishes to appeal an authorising officer’s decision, they can approach an independent SRA adjudicator or adjudication panel. If unsuccessful, the applicant can then escalate the issue to the High Court, which has the right to impose or overrule decisions. Decisions can also be reconsidered in cases where there was an error in law or where the decision maker failed to take proper account of the available evidence.143

140 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
142 RAND Europe interviews with anonymous personnel, SRA, 22 December 2016.
3.3. Nursing and Midwifery Council

3.3.1. Overview

The Nursing and Midwifery Council (NMC) is the regulatory body for nursing and midwifery practitioners in England, Wales, Scotland and Northern Ireland. It was created through the 2001 Nursing and Midwifery Order in 2002 and replaced the former United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC). Like the GMC, it is overseen by the Professional Standards Authority for Health and Social Care (PSA) and is a registered charity in England, Wales, and Scotland.\(^{144}\)

The main responsibility of the NMC is to protect the public by setting a high level of standards for the education, training, conduct and performance of nurses and midwives. More specifically, the NMC is responsible for the following functions:

- **Developing and setting standards** for education and professional conduct, which are contained in *The Code: Professional Standards of Practice and Behaviour for Nurses and Midwives* (2015). This document presents the professional standards that nurses and midwives must uphold in order to be registered to practise in the UK.

- **Maintaining a register** of nurses and midwives practising in the UK.\(^{145}\) The registration procedure varies according to whether the applicant has been trained in the UK, the EEA/EU or other overseas countries. All registered nurses and midwives must undergo a revalidation process every three years in order to be kept on the register.

- **Accrediting healthcare education providers and programmes** against the NMC’s established education standards. There are currently 1,000 approved programmes at 79 approved education institutions (AEIs).\(^{146}\) To ensure that AEIs comply with their education standards, the NMC undertakes monitoring reviews on a regular basis and AEIs are required to submit an annual report.

- **Addressing complaints against nurses and midwives** on the register. Complaints are submitted by the public and appraised by the NMC. If considered appropriate, these complaints are investigated and can lead to the restriction or the removal of a nurse or midwife from the register.

The internal structure of the NMC comprises the following bodies:

- **The Chair**, which presides over the Council meetings and calls members of the Council to speak on items of business.

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\(^{144}\) Registered in the Charity Commission (charity number 1091434) and the Office of the Scottish Charity Regulator (charity number SC038362).


\(^{146}\) Nursing and Midwifery Council, n.d. ‘Approved Programmes’. As of 8 March 2017: https://www.nmc.org.uk/education/approved-programmes/
- **The Council**, which is the governing body of the NMC. It sets the strategic direction of the organisation and professional standards for nurses and midwives. It also oversees the work of the NMC senior staff. Council meetings are public.

- **Council Committees**, which support the work of the Council in the following areas:
  - Audit
  - Remuneration
  - Appointments Board.

- **The Executive**, which implements the Council strategy and is responsible for the day-to-day operation of the NMC. The Executive is led by the Chief Executive and Registrar and is divided into five directorates: Fitness to Practise; Registration and Revalidation; Education, Standards and Policy; Transformation; and Resources.

### 3.3.2. Decision Making Context and Challenges

Within the NMC, organisational decisions concern the governance of the NMC and are mostly made at corporate level or by the Transformation and the Resources directorates. This section will focus on the three directorates responsible for making legislative decisions: the Fitness to Practise, Registration and Revalidation, and Education, Standards and Policy directorates.

With regard to **Registration and Revalidation**, applications are assessed by the administrative staff to determine whether the applicant meets requirements. Through an escalation process, the most complex cases are referred to higher levels of the directorate until ultimately reaching the Director, who then makes a decision with the support of a decision panel. Every three years, registrants must renew their application in order to remain on the register.

According to the NMC’s annual report 2015–2016,\(^{147}\) the Registration and Revalidation directorate processed over **30,000 applications** (28,000 during the previous fiscal year), consisting of:

- 19,133 UK applicants
- 9,389 EEA applicants
- 2,145 overseas applicants.

The **Fitness to Practise (FtP)** directorate employs over 440 staff members and is the largest body within the NMC. Decision making in this directorate involves a number of stages:

- Consisting of managers and lawyers, the **triage department** considers the allegations made and decides whether they merit further investigation.

- If the case is not closed by the triage department, an **early investigation** takes place. This involves contacting the registrant and the individual who submitted the complaint and considering whether there are grounds for further investigation.

- Case investigation teams are then formed with internal investigators and external lawyers. At the end of the **legal investigation**, an internal case examiner makes a decision as to whether to refer the case to the adjudication function.

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\(^{147}\) NMC (2015).
• If the case is referred for **adjudication**, the NMC contacts the registrant to explain that there is going to be a hearing and to provide the opportunity to respond. At this stage, the legal service team prepares the case, which is then heard by a practice committee panel. There are currently 450 panel members appointed by the Council.\(^{148}\)

According to the *NMC Fitness to Practise Annual Report*,\(^{149}\) in 2015 and 2016 the Fitness to Practise directorate:

- Received **5,415 new concerns**.\(^ {150}\)
- Referred **1,429 cases for adjudication** (i.e. examination by the Health or the Conduct and Competence Committees) following investigation by case examiners.
- Made **960 decisions** at substantive order review hearings.
- Imposed **685 interim orders**, of which 89 per cent were imposed within 28 days of receipt of the concern.
- Was subject to **52 appeals**, of which 34 were dismissed by the Court.

The **Education, Standards and Policy** directorate sets standards covering the content of education programmes, the selection of students, and the values and behaviours expected from healthcare professionals. It also maintains a register of approved education programmes and education institutions (AEIs), which are those that meet the NMC standards. This approval is valid for six years, after which period the AEI may apply for revalidation.

Interviews with NMC personnel highlighted the following main challenges:

- **Ensuring consistency across the organisation.** As each directorate deals with a different area, decisions within the NMC are mainly taken at directorate level. This, combined with the high rotation of staff and the lack of any system for information-sharing across directorates, hinders consistency of decisions.\(^ {151}\)

- **Capturing and sharing knowledge** obtained by one department across the organisation. The NMC is working to find a mechanism that would centralise learning across departments through quality checks, appeals, challenges, and other procedures to ensure that they inform future decisions across the organisation.\(^ {152}\)

- **Ensuring unbiased judgement calls.** Some of the decisions taken by the NMC are judgement calls, which can be differentiated from other types of decision due to their subjective nature. An important challenge is to ensure that these are based on a proper and objective consideration of all relevant facts and not affected by personal bias.\(^ {153}\)

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\(^{148}\) RAND Europe interview with anonymous personnel, NMC, 6 January 2017.

\(^{149}\) NMC (2015).

\(^{150}\) On average, the NMC receives 4,500–5,400 new concerns every year. In 2015–2016, 2,665 cases were closed at the initial assessment stage (i.e. before the legal investigation).

\(^{151}\) RAND Europe interviews with anonymous personnel, NMC, 6 and 13 January 2017.

\(^{152}\) RAND Europe interviews with anonymous personnel, NMC, 6 and 13 January 2017.

\(^{153}\) RAND Europe interview with anonymous personnel, NMC, 13 January 2017.
3.3.3. Decision Making Tools, Practices and Processes

The NMC has established a number of practices and processes to support decision making across the organisation.

Decision Making Principles

The NMC has introduced a set of principles that must be observed by all decision makers in the organisation. According to these principles, decisions must be timely, practical, proportionate, transparent, and must be consistent with public protection and interest. In addition, decision makers must make sure to use all evidence available as well as considering the impact of their decisions.

As these principles have only recently been introduced, the degree to which they are embedded in the various directorates varies. To address this, the NMC has designed a plan to ensure that the principles are reflected in each directorate’s quality management framework and that they are included as part of managers’ one-to-one meetings with their staff.

Internal Quality Assurance Processes

Quality assurance checks are carried out at several levels. At the directorate level, managers review decisions made by their staff. At the organisational level, there is a corporate quality assurance function that checks the quality assurance processes in the directorates. In the Fitness to Practise directorate, this process is managed by two review groups:

- The Quality Outcome Review Group (QUORG), which assesses the quality of panel decisions against the decision making principles and the guidance that all decision makers receive as part of the induction programme. The aim is to identify good practices and areas for improvement. The QUORG meets weekly and reviews around 10 per cent of final decisions on a random and risk-based selection.
- The Decision Review Group (DRG), chaired by the Fitness to Practise Deputy Director. The DRG consists of senior management staff, an external representative and a panel member, and receives referrals from a variety of sources including from QUORG in cases where there is a
concern about a decision. The DRG reviews 12 hearing decisions and decides whether action—which may involve referral to the PSA—is necessary.158

Audit and Review
NMC decisions are internally audited and externally overseen. As the NMC’s regulator, the PSA carries out an annual review process, examining samples of decisions made and the data gathered by the different departments of the NMC. In relation to fitness to practise checks, the PSA has a statutory role in reviewing every final decision made by the adjudication panels and a sample of cases closed at early stages. It also looks into the number of appeal cases that have been upheld against the NMC and may decide to refer a case to the High Court.

The results of these performance reviews are published, as well as being informally discussed with the NMC throughout the year.159 The PSA carries out performance reviews of the NMC each year, which have included audits of Fitness to Practise decisions. Findings from these PSA reviews are published in a performance report each year.160 The NMC then identifies actions from these reports in order to inform internal improvement plans for the organisation.

Training
An induction programme is provided for new employees at the NMC. The induction session covers their role in the organisation, the legislative requirements that apply to them, the type of decisions under their remit, the NMC’s making principles, and other relevant areas. Case examiners and panel members who make decisions concerning Fitness to Practise cases must also complete intensive training programmes before they can examine cases.

All decision makers must follow an equality and diversity training session in order to support making decisions that are as fair as possible. Unconscious bias training is also provided for all NMC panel members and case examiners by an external trainer. This training is likely to be rolled out more widely to NMC staff in future. In addition to this, mandatory and optional training is also provided in specific areas such as contract management or procurement.161

Decision Making Panels
To ensure that judgement calls are unbiased, the NMC relies on decision making panels. Fitness to Practise panels are composed of lay and registrant panel members and supported by an independent legal assessor in order to determine final hearings. Furthermore, the legal advisor is responsible for ensuring that decision makers follow the correct precedent and legal policy.162 Similarly, the most complex registration cases are referred to an advisory group within the Registration and Revalidation directorate.

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158 RAND Europe interview with anonymous personnel, NMC, 6 January 2017.
159 RAND Europe interviews with anonymous personnel, NMC, 6 and 13 January 2017.
161 RAND Europe interviews with anonymous personnel, NMC, 6 and 13 January 2017.
162 RAND Europe interview with anonymous personnel, NMC, 13 January 2017.
This group, which includes a lawyer, helps the Director look at the evidence and make a decision. Furthermore, appeals against decisions taken by the Registrar are also reviewed by a panel.\textsuperscript{163}

Legal Advice

NMC decision makers can request legal advice from the legal team. The legal team also helps to ensure that the organisation is up to date with the ever-changing legal framework affecting the NMC and its activities.\textsuperscript{164}

Appeals Process

Individuals have the right to appeal NMC decisions. Registration appeal panels consist of independent panel members, and hear appeals against registration decisions made by the Registrar. In relation to Fitness to Practise decisions, a registrant has the right to appeal to the High Court within 28 days of the final decision. Furthermore, the PSA may also refer cases to the High Court if deemed necessary.\textsuperscript{165}

3.4. Examples of Decision Making from UK Defence and Security

3.4.1. Overview

The UK defence and security sector encompasses the range of activities undertaken by security and intelligence, law enforcement and Armed Forces professionals in order to safeguard national territories and citizens. According to the 2015 National Security Strategy and Strategic Defence and Security Review, these bodies work together with the collective aim of establishing a secure and prosperous UK with global reach and influence.\textsuperscript{166}

Security and intelligence agencies are responsible for collecting and analysing information to support government decision and policy making. Coordinated by the Cabinet Office, UK intelligence agencies sit within different government departments and are mainly concerned with intelligence relating to counterterrorism, organised crime, illegal firearms, economic crime, foreign affairs and military policy. The Security Service (MI5) gathers domestic intelligence; the Secret Intelligence Service (SIS) and Defence Intelligence (DI) are responsible for foreign intelligence; and Government Communications Headquarters (GCHQ) focuses on signals intelligence. As part of the Cabinet Office, the Joint Intelligence Committee oversees the setting of priorities for SIS, MI5, GCHQ and DI.

Often working closely with intelligence agencies, police forces in the UK can be grouped into three general types: national law enforcement bodies, territorial police forces, and miscellaneous police forces. National bodies include the National Crime Agency and national police forces that have a specific, non-regional jurisdiction, such as the British Transport Police. Territorial forces do the majority of policing

\textsuperscript{163} RAND Europe interview with anonymous personnel, NMC, 13 January 2017.
\textsuperscript{164} RAND Europe interview with anonymous personnel, NMC, 13 January 2017.
\textsuperscript{165} RAND Europe interviews with anonymous personnel, NMC, 6 and 13 January 2017.
and – with independent police authority – cover a particular ‘police area’ or region. Finally, miscellaneous forces are responsible for policing specific local areas, such as parks or ports.

The British Armed Forces are tasked with defending the country, its overseas territories and the Crown dependencies, as well as promoting the UK’s wider interests, supporting international peacekeeping and providing humanitarian aid. The UK is a founding and leading member of the NATO military alliance and is party to a number of other collaborative defence arrangements including the Five Power Defence Arrangements.167

For the purposes of this study, the RAND study team has conducted research interviews with individuals from selected defence and security organisations with a view to identifying a diverse range of tools used across UK defence and security domain to support decision making. Individuals currently or formerly affiliated with the following organisations and programmes participated in the study:

- **UK Ministry of Defence**, the British government department responsible for implementing government defence policy and the headquarters of the British Armed Forces.
- **British Army**, the principal land warfare force of the UK with responsibility for defending the UK, its citizens and its defence and security interests – both at home and overseas.
- **College of Policing**, the professional body for policing with a mandate to set standards in professional development to ensure consistency across the 43 forces in England and Wales.
- **Metropolitan Police Service**, the territorial police force that is responsible for law enforcement in Greater London. It also has national responsibilities to coordinate on counterterrorism matters and to protect the British Royal Family.
- **Management of Risk in Law Enforcement (MoRiLE)**, a National Police Chiefs Council (NPCC) programme of work governed through their Intelligence Portfolio with a 2020 ambition to develop a suite of digitally enabled risk modelling solutions for law enforcement.

While the day-to-day activities of defence and security organisations are not directly comparable with those of the GMC, these organisations share analogous decision making challenges – as described below – and draw on a range of decision making tools, practices and processes with potential applicability for the GMC.

### 3.4.2. Decision Making Context and Challenges

Within the UK security and defence sector, operational decisions tend to be made under time pressure. Given that the information on which decisions are based is often ambiguous, personal judgement can also play an important role. One example of an operational decision is the identification of suspect individuals on the basis of pictures, documents, video footage or other information.

Organisational decisions tend to be made less frequently than operational decisions. These decisions often concern policy development and personnel management, and they can be strategic (e.g. prioritisation of areas) or tactical (e.g. allocation of resources to specific areas or activities).

167 The Five Power Defence Arrangements are defence relationships established through multilateral agreements between the UK, Australia, New Zealand, Malaysia and Singapore that were signed in 1971.
Interviews with individuals from various UK security and defence organisations highlighted the following challenges:

- **Time-sensitivity.** Within UK security and defence organisations, operational decisions often have to be made very quickly. Time is a factor that can also affect organisational decision making: for example, education programme planning decisions in the policing sector are said to be made in the context of tight time constraints. 168

- **Knowledge management.** Interviewees highlighted challenges relating to the availability, relevance and reliability of evidence. 169 Given the sensitive or classified nature of information relating to national security matters (e.g. military support to third countries), these data may often only be shared with a limited number of individuals and there may be a lack of available evidence upon which decisions are made. 170 Due to the sensitive nature of much of the data handled by security and defence professionals, decision makers have a tendency not to share information with colleagues. While this is imperative in some instances, one interviewee observed that in other cases this practice can prevent colleagues from benefiting from this information. 171

- **Recording decisions and capturing lessons learned.** One interviewee noted that there are already systems in place to help decision makers reflect on their decisions, to consider what worked well and what could be improved, and to ensure that lessons learned are recorded more systematically – but that these could be improved further and made even more systematic. 172

- **Bureaucracy and complexity of organisational structures.** Structures within some UK security and defence organisations were perceived as hierarchical and highly bureaucratic and may cause delays in decision making processes. 173 Further complications arise when decisions are made across government departments or in cooperation with other countries (e.g. political decisions regarding interventions in third countries).

- **Shortage in capacity and capabilities.** One interviewee noted that a large number of security and defence organisations in the UK are experiencing shortfalls in human capacity and capabilities, even more so since they are being expected to do more with the same amount of resources. 174

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168 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview D)
169 RAND Europe interviews with anonymous personnel, anonymous security and defence organisation, 8 and 9 December 2016 (interviews C and D)
170 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).
171 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview A).
172 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview B).
173 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview A)
174 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview D).
3.4.3. Decision Making Tools, Practices and Processes

Interviewees discussed a number of tools and processes used in UK security and defence organisations designed to address these challenges. These are described in more detail below.

Decision Making Models

To help decision makers handle the complexities of decision making, certain organisations have developed frameworks in which decisions can be examined and challenged. For example, the College of Policing has developed a National Decision Model (NDM). This provides policing professionals with a mechanism for gathering information and intelligence required to assess threats, as well as helping improve decision makers’ understanding of what powers, policies and tactics they have at their disposal. The NDM enables practitioners to structure their approach to decision making, as well as to document and review their decisions. As shown in Figure 3-1, the NDM consists of six key elements: information, assessment, power and policy, options, and action and review, as well as a code of ethics at the centre of the decision making framework.

Figure 3-1: The National Decision Model (NDM)

SOURCE: College of Policing (n.d)

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175 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview D).
While the NDM is specific to policing, it has been used as a basis for the development of decision making tools used by other organisations. For example, the Joint Emergency Services Interoperability Programme has developed the Joint Decision Model (JDM) (see Figure 3-2) to provide those involved in emergency response – the police, fire and rescue, and ambulance services – with a common framework for making decisions together.176

Figure 3-2: Joint Decision Model (JDM)

Complementing the NDM, the National Intelligence Model (NIM) is a well-established and recognised model within policing used by managers for setting strategic direction, allocating resources intelligently, formulating tactical plans and coordinating the resulting activity. The NIM is designed to provide greater consistency of policing across the UK, to inform the management of risk, and to allow operational strategies to focus on key priorities.177

Risk Modelling Tools

The Management of Risk in Law Enforcement (MoRiLE) project team has developed a risk modelling tool to support law enforcement agencies in identifying strategic and tactical priorities. The tool is divided into four parts:

1. The impact section looks at the threat posed by an event, individual or group and examines its actual impact on individuals and communities.

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2. The **likelihood section** takes into account the scale of the threat (frequency and volume). The scores obtained in the impact and likelihood sections are combined to calculate the total risk score.

3. The **confidence section** considers how much confidence there is in the intelligence picture and the accuracy of the impact assessment.

4. The **organisation position section** analyses the organisational response to the threat. It considers the impact on the organisation's reputation, the available resources to address the threat, and the ability of the organisation to reduce the identified risk.178

### Professional Standards and Codes of Practice

Through the Authorised Professional Practice, the College of Policing sets professional standards in a range of subject areas: vetting, anti-corruption, governance, and complaints and misconduct. Similarly, specific standards for recruitment, leadership, specialist roles, fitness, and equality have been also designed by the College to support decision makers. The Authorised Professional Practice provides guidance in relation to the observance of these standards and decision making in these areas.179 In the UK, Ministers and civil servants must abide by the rules of conduct set in the Ministerial Code. The document provides guidance to government officials as to how to exercise their public duty. As one interviewee explained, the extent to which this set of norms affects day-to-day decision making is not clear but it sets guidelines as to what aspects should dictate the conduct of government officials.180

### Justification of Decisions

In the UK Ministry of Defence, the Permanent Joint Headquarters (PJHQ) requires that all decisions in relation to military operations must be accompanied by a military estimate. This mechanism seeks to ensure that decisions made in the military domain are thought through and all relevant considerations are taken into account, starting with the desired outcome and working backwards from that.181

### Applying Metrics to Compare Decision Options

The Ministry of Defence uses **scoring** methodologies to support the decision making process in relation to allocation of resources and engagement in international defence operations.182 Through this method, decision makers attribute scores to different elements (e.g. countries at risk of becoming failed states, offers for public contracts, etc.) based on a pre-defined set of evaluation **criteria**. This enables decision

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178 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview B).


180 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).

181 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).

182 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).
makers to make an informed comparison of decision options when determining where to deploy resources.

Supervision and Challenge Mechanisms

Decisions made within a hierarchical organisational structure can be reviewed and modified by higher ranking officials. As explained above, this feature is meant to act as a safeguard but it can also pose obstacles to good decision making. To address this challenge, the British Army has introduced a system whereby a middle-ranking official may challenge a decision made by a superior. The Ministry of Defence seeks to ensure that challenge mechanisms are in place from the very early stages of the decision making process.

From a governance perspective, the Ministry of Defence, in line with other government departments, has appointed non-executive directors to its management boards in order to strengthen the quality of decision making.183 As an interviewee explained, the involvement of non-executive members constitutes a challenge mechanism as these individuals are prepared to ask the ‘awkward’ questions.184

Training

Many UK security and defence organisations have established inductive training programmes that focus on practitioners’ role in the decision making processes. For example, the College of Policing is responsible for creating continuous professional development (CPD) frameworks and specific training activities.185

Mentoring Programmes

Mentoring or shadowing programmes within security and defence organisations are designed to improve the knowledge of newcomers by learning from the experience of more experienced practitioners. An interviewee from the defence sector noted that while induction programmes are necessary to understand the command system within the organisation, new employees can also benefit from working closely with more experienced colleagues.186

Audit

Some policing and military bodies have set up internal audit systems where a team within the organisation is responsible for reviewing decisions taken across departments. As one interviewee noted, the fact that these reviewers are part of the same organisation as decision makers does not necessarily affect the credibility or objectivity of the process as these organisations are large in size and reviewers are taken from

184 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).
185 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview D).
186 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview A).
other teams. To mention one example of auditing practices in policing organisations, MoRiLE is subject to scrutiny by the Surveillance Commissioner and HMIC, and also has internal auditing and review processes in place. These processes include the use of short, structured debrief techniques to review critical incidents or large-scale operations.

Communication and Culture

Interviewees highlighted the importance of promoting good communication practices within security and defence organisations. According to one interviewee, the supportive team culture of an organisation can facilitate the exchange of experiences and good practices among peers. This peer culture is said to help ensure a sound level of communication as it can encourage decision makers to consult their peers and draw lessons from their previous experiences. Information sharing can also be facilitated through meetings, debriefings, email exchange and secure information-sharing systems.

Transparency

To promote the transparency of procurement decisions, the Ministry of Defence, in line with other government departments, provides Parliament with copies of any Ministerial Direction letters to its Accounting Officer where it has been decided to award a public contract to a tenderer that has not presented the best value for money. The objective of this mechanism is to discourage public authorities from basing their decisions on political reasons instead of on best value for money. According to one interviewee, this tool has been used in cases where there had been an interest in awarding the contract to a UK-based company.

Information Technology

Interviewees from the policing sector observed that there are opportunities for improvement regarding the use of IT systems and innovative tools by UK law enforcement. One interviewee from the policing sector explained that a risk modelling solution is needed to support the effective use of big data within a

187 RAND Europe interviews with anonymous personnel, anonymous security and defence organisations, 8 December 2016 (interview A).
188 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview B).
189 RAND Europe interview with anonymous personnel, anonymous security and defence organisations, 8 December 2016 (interview A).
190 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview A).
191 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview A).
192 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview B).
193 RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 9 December 2016 (interview C).
194 RAND Europe interviews with anonymous personnel, anonymous security and defence organisation, 8 and 9 December 2016 (interviews B and D).
policing context.\textsuperscript{195} Some tools are already in place to facilitate information sharing across departments and to support decision making processes. For example, the Police National Database has been developed, allowing police forces to upload information that can be used across all agencies with access to it. While this information system is currently being used widely across policing bodies, it lacks the risk modelling component that could improve the decision making process. Interview evidence indicates a shared interest among policing professionals to further develop the role of technology in the day-to-day decision making of police practitioners.\textsuperscript{196}

\textsuperscript{195} RAND Europe interview with anonymous personnel, anonymous security and defence organisation, 8 December 2016 (interview B).

\textsuperscript{196} RAND Europe interviews with anonymous personnel, anonymous security and defence organisations, 8 and 9 December 2016 (interviews B and D).
4. Conclusion

This chapter presents a summary of the key findings structured around the three key research questions. It draws together insights from the literature and interviews to highlight the areas of most relevance to the GMC.

4.1. Summary of Key Findings

**RQ1: What academic definitions and frameworks exist around ‘fair decision making’?**

While the research brief set by the GMC focused on ‘fair decision making’, this term was found to be lacking or inconsistent in the literature and was defined in various ways by the academic interviewees. This may reflect the inherent challenges in measuring ‘fair outcomes’ and the subjective nature of the term. In consultation with the GMC, the RAND study team therefore focused the analysis on indicators of ‘fair decision making’, namely transparency, objectivity, consistency, reliability, accountability and evidence-based decision making.

A range of decision making theories were examined, focusing on these indicators and providing a framework for organisations to reflect on decision making tools and challenges. The literature identified numerous drivers of good organisational decision making including a transparent and open organisational culture, a clearly defined organisational structure, and robust leadership. At the group level, the analysis found that engaging in critical thinking can lead to fairer decision making, while it was also noted that eliciting constructive challenge from colleagues can be an effective strategy for individuals.

The literature and academic interviews identified a series of challenges facing decision makers. For example, the analysis found that individual decisions can be susceptible to the influence of biases, noise and the personal characteristics of the decision maker. At the group level, the literature indicated that decision making can be influenced by ‘groupthink’ and the desire to conform to the opinions of others in a group.

Various methods and tools to address these challenges were also discussed in the literature, notably decision rules, knowledge maps, decision trees, algorithms, decision conferencing and training. Subsequent interviews with representatives of the NMC, GMC, SRA and defence and security sector have indicated that a number of these tools are already being implemented in these organisations (see Table 4.1 and RQ2 below).
RQ2: Which tools, processes, good practices and methods can be used to ensure high quality and fairness in decision making?

The study identified a number of tools and techniques that have been highlighted in the literature or used in the organisations examined. An overview of these can be found in Table 4.1.

<table>
<thead>
<tr>
<th>Methodology, Models and Templates</th>
<th>Client</th>
<th>Comparator organisations</th>
<th>Research insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated Decision Making (see e.g. Section 3.2.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Decision Document Templates (e.g. Section 3.2.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Horizon Scanning (e.g. Section 3.2.3)</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Justification of Decisions (e.g. Section 3.4.3)</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Knowledge Maps (e.g. Section 2.5)</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Risk Modelling Tools (e.g. Section 3.4.3)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Decision Making Models (e.g. Section 3.4.3)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisational Culture</th>
<th>Client</th>
<th>Comparator organisations</th>
<th>Research insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge Mechanisms (e.g. Section 3.4.3)</td>
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</tr>
<tr>
<td>Guideline Reviews (e.g. Section 3.2.3)</td>
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<td>✓</td>
</tr>
<tr>
<td>Internal Knowledge Management (e.g. Section 3.2.3)</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Appeals and Reconsideration (e.g. Section 3.3.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Case Direction Meetings (e.g. Section 3.2.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Decision Making Panels (e.g. Section 3.3.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Decision Conferencing (e.g. Section 2.5)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oversight</th>
<th>Client</th>
<th>Comparator organisations</th>
<th>Research insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit (e.g. Section 1.1.1)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Internal Consistency Checks (e.g. Section 1.1.1)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Oversight (e.g. Section 3.2.3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Quality Assurance (e.g. Section 3.3.3)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Mentoring (e.g. Section 1.1.1)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Supervision by Technical Advisors (e.g. Section 3.2.3)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to Advisors (legal) (e.g. Section 3.3.3)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Decision Option Metrics (e.g. Section 3.4.3)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Decision Trees (e.g. Section 2.5)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 4.1 lists the tools, processes and practices identified through the research interviews and the literature review. Given the limited sample of interviewees (see Table 1.2 in Section 1.4.2), we recognise that there may also be other tools and processes used by these organisations that were not mentioned by interviewees.
As Table 4.1 shows, there is a broad suite of decision making tools and methods available to regulatory professionals and explored in the literature. With the exception of audit, oversight, mentoring, codes of conduct and training, most tools do not appear to be used across all four comparator sectors and organisations. The table also indicates that certain methods and techniques, such as quality assurance and access to legal advisors, are applied in the comparator sectors and organisations but are not discussed in the literature reviewed as part of this study. While this list is not intended to be exhaustive or representative, it illustrates a number of examples that could be of interest to the GMC.

These clusters of tools, practices and processes serve a number of organisational functions:

- **Organisational culture** can foster fair decision making practices by promoting transparency and encouraging individual reflection and constructive challenge.
- Appropriate **organisational structures** can provide support for decision makers through institutional mechanisms.
- **Methodology, models and templates** can assist the decision making process by helping personnel justify their decisions, capture decision making outcomes and lessons learned, and avoid ‘re-inventing the wheel’ when making decisions.
- **Organisational resources** can help decision makers access relevant expertise and/or guidance.
- **Standards** can provide decision-makers with a set of principles against which to develop and implement their decisions.
- **Effective management of the workforce** can help individuals understand their roles and responsibilities.

Interestingly, interviewees did not explicitly associate the oversight mechanisms used by the GMC and by comparator organisations with fair decision making. Rather, oversight tools and processes were often said to be used by organisations in order to assure the effectiveness of their processes. While ‘mentoring’ has been placed in the ‘oversight’ category (see Table 4.1), it could also be linked to ‘organisational culture’ or ‘workforce management’, and it is designed to help decision makers feel supported and equipped to undertake their decision making responsibilities.

These tools and methods can be used to address the various organisational challenges around decision making explored in the research interviews and literature review. Some examples of how tools can be harnessed to address these challenges are presented in Table 4.2:
### Table 4.2: Challenges and Applicable Tools

<table>
<thead>
<tr>
<th>Challenges facing decision makers</th>
<th>Examples of applicable tools and methods</th>
</tr>
</thead>
</table>
| Ensuring consistency across an organisation | • **Internal consistency checks** (*GMC*): Calibration meetings within and across departments can be arranged to ensure that decision making processes are consistent.  
• **Decision document templates** (*GMC, SRA*): These templates ensure that there is a consistent style and a similar way of thinking adopted by staff when drafting decision documents. |
| Keeping pace with legislative and regulatory changes | • **Access to legal advisors** (*GMC, NMC*): Decision makers can obtain legal advice from a legal team upon request. The legal team can help ensure that an organisation keeps up to date with changing legislation and regulations.  
• **Horizon scanning** (*GMC, SRA*): Within an organisation, a group of experts can conduct research focusing on a wide range of issues in the market and legal environment affecting organisational processes and decision making. |
| Avoiding bias in decision making | • **Unconscious bias training** (*GMC, NMC*): This training can be delivered internally or externally, encouraging staff to carefully weigh up information and provide clear reasons for decisions to manage biases. |
| Managing large volumes of information with time pressures imposed | • **Automated decision making** (*SRA, defence and security*): To deal with (e.g.) a high volume of applications, an organisation can put in place an automated system to carry out an initial assessment of certain information – for example, examination results – before decision makers then review the applications that have been sifted. |

The analysis presented in this report highlights a number of good decision making practices at the cultural and structural levels:

• Clearly attributing specific roles and responsibilities for decision makers (e.g. through a Scheduled Delegation of Decisions).
• Clearly communicating information to employees concerning the resources at their disposal (e.g. Access to Legal Advisors, and Guidance Documents).
• Fostering transparency, a learning environment, and open communication about decisions and their outcomes.
• Promoting good knowledge management practices so that the decisions and reasoning behind them are documented and accessible to others in the organisation (e.g. through Decision Document Templates or Justification of Decisions).
• Ensuring that there are discussions regarding how to sustain and improve decision making processes and outcomes on a regular basis, both at the directorate and organisational levels.

The research findings also indicate that organisations need to establish mechanisms to help employees do the following:
• Structure their decision making processes.
• Document the outputs and outcomes of their decisions.
• Identify required competences for decision makers and continuously assess these in personnel responsible for making decisions to identify skills gaps and to develop training as appropriate.
• Set up formal and informal mechanisms to review and learn from their decisions.
• Understand what evidence should and should not be taken into account.
• Mitigate against the risks of missing evidence.

Examples of decision making tools and methods that might be of particular interest to the GMC include the use of automation, algorithms and horizon scans to further improve organisational decision making practices. While these could be considered as potential future avenues for decision making, the literature also notes the importance of keeping humans in the loop. That is, organisations should aim to strike a balance between ensuring that decision making processes are as consistent as possible, while also ensuring that decision making draws on discretionary human judgement and critical thinking.

RQ3: What lessons can be drawn from this study for the GMC’s decision making practice?

As Table 4.1 indicates, the GMC are already employing a number of decision making tools and techniques to a greater or lesser degree, including guidance, audit, consistency checks, calibration meetings, mentoring, decision making templates and training. Additional methods could further strengthen the GMC’s decision making practices, such as the use of automated decision making tools to help decision makers manage the high volume of applications and an improved internal understanding and assessment of the competences required for decision makers.

Earlier in the report, the RAND study team quoted Sutcliffe & McNamara, highlighting the importance of the organisational setting in which the decision maker takes his or her decisions. While it is important to ensure that these tools and techniques are used by decision makers, the efficacy of these methods is partly dependent on the organisational culture, organisational structure, and the effective alignment of these tools.

In practice, this means that it is important for the GMC to create an organisational environment in which good decisions can be made by ensuring that the ‘right people’ – i.e. knowledgeable, experienced decision makers with relevant authority and a stake in the decision outcome – participate in the process. This also entails creating a setting that encourages thoughtful deliberation and allows for healthy differences in opinion, which can only take place with the support of the organisation’s leadership.

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As the study did not assess all of the GMC’s structures and processes – nor did it seek to evaluate the effectiveness of the tools examined – this report will not draw any conclusions regarding whether decision making practices across the organisation are aligned with its internal standards. This would be an area for the GMC to assess in order to determine whether the following characteristics are present in its organisational culture:

- A shared understanding of the roles and responsibilities of decision makers.
- Awareness of the competences required to perform decision making functions, which are assessed regularly in order for competence gaps to be met with appropriate training and support.
- Awareness, understanding and application of relevant decision making tools and guidance.
- An organisational environment of transparency and challenge.
- Supportive leadership that sustains and reinforces decision making principles and practices.
References


Understanding How Organisations Ensure That Their Decision Making is Fair


Understanding How Organisations Ensure That Their Decision Making is Fair


Appendix A: Literature Review Methods and Approach

The RAND study team conducted a Rapid Evidence Assessment (REA) to provide an overview of the literature on organisational methods used to support fair decision making. The REA was not a systematic review of the literature in this domain but instead aimed to identify key sources and extract information on organisational methods. The REA consisted of several stages: after developing and refining a search strategy in consultation with the GMC, the RAND study team ran searches applying the agreed search terms and parameters, before saving the results into an EndNote file. Following this stage, a researcher scanned the titles and abstracts of the identified articles for relevance and reviewed the shortlisted articles for analysis.

Searches

To identify relevant literature, the RAND study team ran a number of searches. These included the following:

1. A preliminary search using Google Scholar deploying the following search terms ‘decision making’ and ‘regulatory transparency’ or ‘impartiality’ or ‘perceived fairness’ or ‘distributive justice’ or ‘administ* fairness’ or ‘unconscious bias’ or ‘good practice principles’ or ‘post-decision review’ or ‘quality assurance processes’ or ‘fairness and proportionality’. The purpose of this initial scan was twofold. First, it allowed the RAND study team to identify and test the relevance of particular search terms by reviewing the search results. Second, it enabled the RAND study team to identify two or three relevant articles with which to test a search strategy. The rationale for this approach is that a robust search strategy with the identified key terms would include these articles in its results.

2. A targeted search of relevant databases. The RAND study team was supported by a RAND librarian and, after a process of test and elimination as outlined below, focused on the three most comprehensive databases, PsycInfo, Academic Search Complete and Business Source Complete, to identify relevant empirical evidence and research developments. The search focused on English-language literature from the UK, the US, Canada, EU countries, and Australia. Due to the very high number of results, the decision was made with the agreement of the client to restrict analysis to papers published after 2005. To identify relevant grey literature, RAND researchers conducted searches in Google and Google Scholar, as well as identifying materials through targeted searches of organisations’ websites.

3. ‘Snowball’ searching. The shortlisted papers captured by the search were then reviewed by the RAND study team. References cited in the literature that met the criteria for inclusion in this
review were followed up on and identified for inclusion in this review. The date limitation deployed in the previous search was not deployed in the snowball search, in order to risk missing seminal works. Literature identified through this step included a number of the strongest contributions to the discourse on fair decision making, including a number of highly cited, seminal works in the field.199

Databases Searched and Studies Identified
During the initial stages of the research, the RAND study team ran searches in PsycInfo, Academic Search Complete, Business Source Complete, OpenGrey, JSTOR and Web of Science (although the decision was later taken to exclude OpenGrey, JSTOR and Web of Science). Testing of the databases included a variety of permutations of search terms. While this process produced an excess of irrelevant results, a small number of relevant articles were identified and used to test the more refined search strategy that the RAND study team sent to the GMC for approval on 26 September 2016.

The GMC supplied a number of additional search terms that were added to the search strategy. The RAND study team then interrogated all databases using this extended strategy. Following analysis of the search results, the decision was made to exclude JSTOR and Web of Science from the search, as the vast number of results from these databases (over 10,000 from each) made the results unmanageable for the timeframe and scope of the REA. Furthermore, a quick scan of the results suggested that the vast majority of these results fell outside of the focus of this project.

Following further discussion among the RAND study team on the high number of search results, it was decided to search only titles and abstracts, and to review papers published after 2005 in the initial scan (1,730 results), supplemented by ‘snowballing’ of papers from all publication dates. A manual review of titles and abstracts of papers published after 2005 resulted in 40 papers for in-depth review. A total of 9 of these were cited in the final literature review. At the same time, publications cited in these papers were identified for inclusion. A total of 34 papers were added through snowballing, all of which are highly cited.200

Grey literature was also reviewed. An initial search through OpenGrey proved to be problematic, as a high number of irrelevant articles were found among the results and links to the full text of potentially relevant articles were not provided by the database. A RAND Librarian also advised that the database interface was not conducive to bulk searching, that is, applying lengthy search strings as used in this review. The search for grey literature was therefore moved on to Google and Google Scholar, as well as a targeted search of the websites and relevant publications of regulatory bodies with a similar decision making remit to the GMC.

Inclusion Criteria
As noted in Section 1.4.1 of this report, the search strategy was structured around a Topic-Descriptors-Context framework, which groups search terms into theme: the central topic of decision making; the terms

199 These works include Janis (1972), Tversky et al. (1974), Stanovich & West (2000), Jones & Harris (1967) and Higgins (1997).
by which to characterise the types of decision in which the GMC are particularly interested; and the context in which the decision is made, chosen for its applicability to the GMC. The search terms used for the interrogation of the databases are presented in Table A.0.1.

Table A.0.1: Search Terms Used

<table>
<thead>
<tr>
<th>Main Topic</th>
<th>“Decision making”</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Context</td>
<td>Authority OR Regulator OR Regulatory OR Society OR Committee OR Ombudsman OR Inspectorate OR Agency OR Council OR Board OR Organisation* OR (Organization*) OR Panel OR Council</td>
</tr>
<tr>
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<td>English</td>
</tr>
<tr>
<td>Publication Type</td>
<td>Any except dissertations</td>
</tr>
<tr>
<td>Year Range</td>
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</tr>
<tr>
<td>Countries</td>
<td>United Kingdom</td>
</tr>
<tr>
<td></td>
<td>United States</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
</tr>
<tr>
<td></td>
<td>Europe (EU countries)</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
</tr>
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</table>
Box A.1 presents the search string used for Google Advanced Searching.

**Box A.1: Google Advanced Search String**

<table>
<thead>
<tr>
<th><strong>All these words:</strong></th>
<th>Decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any of these words:</strong></td>
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</tr>
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<tr>
<td><strong>Language:</strong></td>
<td>English</td>
</tr>
<tr>
<td><strong>Region:</strong></td>
<td>none (too time consuming)</td>
</tr>
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</tr>
<tr>
<td><strong>Terms appearing:</strong></td>
<td>anywhere on the page</td>
</tr>
<tr>
<td><strong>Searched:</strong></td>
<td>first 200 results</td>
</tr>
</tbody>
</table>
Appendix B: Literature Cited in the Review

As Table B.0.1 shows, the RAND study team included nine publications in the literature review that were identified through a structured search of the databases listed in Appendix A, while 34 of the publications included were identified through ‘snowball’ searching.

Table B.0.1: Literature Included in Review

<table>
<thead>
<tr>
<th>Structured Search Results</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Author (Date)</th>
<th>Full Reference</th>
</tr>
</thead>
</table>


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**Snowballing Search Results**

<table>
<thead>
<tr>
<th>Author (Date)</th>
<th>Full Reference</th>
</tr>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Title</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kahneman et al. (2016)</td>
<td>'Inconsistent Decision Making is a Huge Hidden Cost for Many Companies. Here’s How to Overcome What We Call ISE.'</td>
</tr>
<tr>
<td>Ref.</td>
<td>Author(s)</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
Appendix C: List of Interviewees

We are grateful to the numerous academic and practitioner experts who took part in interviews and informed the conclusions of this study. Where consent has been given, their names and/or affiliations are listed in the table below. Contributions have been anonymised in Table C.0.1 and throughout the report in certain cases where interviewees have requested to remain anonymous.

Table C.0.1: List of Interviewees

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisational Affiliation</th>
<th>Sector</th>
<th>Date of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Amison</td>
<td>Head of Registration of Applications, General Medical Council, UK</td>
<td>Health</td>
<td>4 October 2016</td>
</tr>
<tr>
<td>Jessica Lichtenstein</td>
<td>Head of Quality Assurance, Education and Standards Directorate, General Medical Council, UK</td>
<td>Health</td>
<td>10 October 2016</td>
</tr>
<tr>
<td>Anna Rowland</td>
<td>Assistant Director, Policy, Business Transformation and Safeguarding, Fitness to Practise, General Medical Council, UK</td>
<td>Health</td>
<td>12 October 2016</td>
</tr>
<tr>
<td>Keith Hawkins</td>
<td>Professor Emeritus of Law and Society, Oxford University and Fellow Emeritus of Oriel College, Oxford University, UK</td>
<td>Academia</td>
<td>17 October 2016</td>
</tr>
<tr>
<td>Andrew Edgar</td>
<td>Associate Professor, Faculty of Law of the University of Sydney, Australia</td>
<td>Academia</td>
<td>25 October 2016</td>
</tr>
<tr>
<td>Robert Thomas</td>
<td>Professor of Public Law, University of Manchester, UK</td>
<td>Academia</td>
<td>31 October 2016</td>
</tr>
<tr>
<td>Dan Lovallo</td>
<td>Professor of Business Strategy, University of Sydney Business School, Australia; research fellow at the Institute for Business Innovation at the University of California, USA</td>
<td>Academia</td>
<td>3 November 2016</td>
</tr>
<tr>
<td>Roy Poses</td>
<td>Clinical Associate Professor of Medicine,</td>
<td>Academia</td>
<td>17 November</td>
</tr>
<tr>
<td>Anonymous</td>
<td>Solicitors Regulation Authority, UK</td>
<td>Legal</td>
<td>5 December 2016</td>
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<tr>
<td>Anonymous</td>
<td>Formerly Metropolitan Police and British Army, UK</td>
<td>D&amp;S</td>
<td>8 December 2016</td>
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<tr>
<td>Anonymous</td>
<td>National Police Chiefs Council MoRiLE (Management of Risk in Law Enforcement) Programme Lead, UK</td>
<td>D&amp;S</td>
<td>8 December 2016</td>
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<tr>
<td>Anonymous</td>
<td>Former civil servant, Ministry of Defence, UK</td>
<td>D&amp;S</td>
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Appendix D: List of Interview Questions

This appendix provides an overview of the types of questions asked during the research interviews. The interviews were semi-structured, which means that the RAND study team used the list of questions as a guide to touch upon the key topics relevant for this study, rather than following a rigid protocol.

Two interview protocols were used during the study and are presented in this appendix. The first of these was used when conducting interviews with GMC, SRA, NMC and defence and security interviewees, while the second was used for the interviews with academic experts.

**Interview Protocol 1: GMC, SRA, NMC, Defence and Security**

1. Please could you start by telling us about your role and areas of expertise?
2. What types of decision do you make in your organisation?
   a) How are these decisions taken?
   b) Who is responsible for making these decisions?
   c) Who is responsible for auditing these decisions?
   d) How many of these decisions are typically made and how often?
3. What decision making processes are in place in your organisation more broadly?
4. Is ‘fair decision making’ assigned a specific definition by your organisation? If so, what is it?
5. What are the main challenges relating to making fair decisions in your organisation?
6. Which tools, practices or methods are available to help employees in your organisation address these challenges?
7. [For each tool/practice/method]:
   a) Please briefly describe the decision making practice/method.
   b) Why was it introduced, and what is its main purpose?
   c) How is it applied in practice?
   d) Who is responsible for overseeing and implementing it?
   e) How costly and time-intensive has it been to develop and implement the tool?
   f) What are its advantages and limitations? Has its effectiveness been evaluated formally?
   g) To what extent do you believe this tool/practice/method can be applied in other organisations?
8. Do you think this tool/these tools are sufficient? If not, what other tools could be useful?
9. Are you aware of tools that exist in other organisations or sectors that you think could benefit your organisation?
Interview Protocol 2: Academic Experts

1. How would you define ‘fair decision making’? How does this compare with definitions put forward by other academic experts?
2. What schools of thought exist around ensuring fairness in organisational decision making?
3. How has academic understanding of decision making changed over time? How do fair decisions fit into this understanding?
4. What are the main challenges relating to making fair decisions in organisations identified in your research or the wider literature?
5. Which tools, practices or methods are identified in the literature as being available to help professionals address these challenges?
6. [For each tool/practice/method]:
   a) Please briefly describe the decision making practice/method.
   b) Why was it introduced, and what is its main purpose?
   c) How is it applied in practice?
   d) Who is responsible for overseeing and implementing it?
   e) How costly and time-intensive has it been to develop and implement the tool?
   f) What are its advantages and limitations? Has its effectiveness been evaluated formally?
7. Do you think this tool/these tools are sufficient? If not, what other tools could be useful?
8. Are there any lessons that can be identified from other sectors (e.g. policing, law) for the GMC and healthcare regulation more broadly?