

EUROPEAN PSYCHIATRIC ASSOCIATION (EPA) GUIDANCE ON FORENSIC PSYCHIATRY: EVIDENCE BASED ASSESSMENT AND TREATMENT OF MENTALLY DISORDERED OFFENDERS

Birgit A Völlm ¹, Martin Clarke ², Vicenç Tort ³, Allan O Seppanen ⁴, Pawel Gosek ⁵, Janusz Heitzman ⁵, Erik Bulten ⁶

¹Section of Forensic Mental Health, Division of Psychiatry and Applied Psychology, University of Nottingham, Institute of Mental Health, Triumph Road, Nottingham NG7 2TU, United Kingdom

²Nottinghamshire Healthcare NHS Foundation Trust, Institute of Mental Health, Triumph Road, Nottingham NG7 2TU, United Kingdom

³Unitat Polivalent de Psiquiatria Quatre Camins. Penitentiary Psychiatry. Parc Sanitari Sant Joan de Deu. Sant Boi de Llobregat. Barcelona. Spain

⁴Helsinki University Hospital Psychoses and forensic psychiatry Vanha Valtatie 198, 04500 Kellokoski, Finland & Vanha Vaasa Hospital Vierinkiventie 1, 65380 Vaasa, Finland

⁵Department of Forensic Psychiatry, Institute of Psychiatry and Neurology, 9 Sobieskiego St., 02-957 Warsaw, Poland

⁶Pompe Foundation, Nijmegen, Netherlands

E-mail of corresponding author: birgit.vollm@nottingham.ac.uk

ABSTRACT

Forensic psychiatry in Europe is a specialty primarily concerned with individuals who have either offended or present a risk of doing so, and who also suffer from a psychiatric condition. These mentally disordered offenders (MDOs) are often cared for in secure psychiatric environments or prisons. In this guidance paper we first present an overview of the field of forensic psychiatry from a European perspective. We then present a review of the literature summarising the evidence on the assessment and treatment of MDOs under the following headings: The role of the forensic psychiatrist as an expert witness, risk assessment, treatment settings for MDOs, and effectiveness of psychological and pharmacological interventions. We undertook a rapid review of the literature with search terms related to: forensic psychiatry, review articles, randomised controlled trials and best practice. We searched the Medline, Embase, PsycINFO, and Cochrane library databases from 2000 onwards for adult groups only. We scrutinised publications for additional relevant literature, and searched the websites of relevant professional organisations for policies, statements or guidance of interest. We present the findings of the scientific literature as well as recommendations for best practice drawing additionally from the guidance documents identified. We found that the evidence base for forensic-psychiatric practice is weak though there is some evidence to suggest that psychiatric care produces better outcomes than criminal justice detention only. Practitioners need to follow general psychiatric guidance as well as that for offenders, adapted for the complex needs of this patient group, paying particular attention to long-term detention and ethical issues.

Key words

Forensic psychiatry, Europe, mentally disordered offender, expert witness, risk assessment, prison, treatment, best practice, recommendations

1. INTRODUCTION

1.1 Aims

The aim of this guidance paper is threefold: Firstly, we give an overview of the field of forensic psychiatry (1.2 – 1.5). Secondly, we provide a literature review of the evidence base and best practice regarding the assessment and treatment of MDOs under the following headings: the role of the forensic psychiatrist as expert witness, risk assessment, treatment settings for MDOs, and effectiveness of psychological and pharmacological interventions, based on articles pertaining to reviews, randomised controlled trials and publications on best practice (3.2 – 3.5). We incorporate recommendations for best practice in forensic-psychiatric care based on the scientific literature as well as the guidance identified.

1.2 Mental disorder and crime

Up until the 1980ies most professionals believed that there was no link between mental disorders and violence (e.g. [1]). Several large scale epidemiological studies have since resulted in a reappraisal of this position. One example of an early study that helped to reshape opinion is the Epidemiological Catchment Area (ECA) study [2] a cross-sectional, retrospective survey comprising a community sample of over 17 000 participants in five large US cities. Based on self-report, the study found a lifetime prevalence of violence of 7.3% in those with no psychiatric disorders whereas this figure was 16.1% in those with serious mental illness (schizophrenia or major affective disorders) and rose to 35% in those with substance misuse disorders; individuals with mental illness *and* substance misuse had a lifetime prevalence of violence of 43.6%. This suggests that, while major mental illness appears to be related with violence, substance misuse may have a much more significant role in increasing the likelihood of committing a violent act. This importance of substance misuse was also shown in the MacArthur Violence Risk Assessment Study (e.g. [3]) which followed up over 1000 patients discharged from psychiatric care and used different methods of collating information on violence (self-report, carers' report and criminal records). The study found no significant difference between the prevalence of violence in patients and others living *in the same neighborhood* when only looking at individuals without substance abuse. Substance misuse raised the rate of violence in both patients and healthy individuals but did so disproportionately in the patient group, suggesting substance misuse acts as a mediator between mental illness and violence.

More recently a number of meta-analyses have synthesized data available on the relationship between mental disorders and violence (e.g. [4-8]). These reviews, drawing on a large number of primary studies (e.g. over 200 for schizophrenia), conclude that schizophrenia, other psychoses and bipolar disorder are all associated with violence. However, large variations were identified with odds ratios between 1 and 7 for schizophrenia in males and between 4 and 27 for females. For bipolar disorder, odds ratio estimates ranged from 2 to 9. Importantly, for both disorders comorbid substance abuse increased odds ratios up to threefold, and for bipolar disorder the significant relationship with violence disappeared when controlling for substance misuse. For all serious mental illness diagnoses substance misuse played a more significant role in increasing the risk for violence compared to the illness. Personality disorders (PD) also appear to increase the risk of violent behaviour by threefold compared to individuals with no such disorder, and in offenders those with PD have a higher risk of re-offending compared to those without though outcomes differ greatly by PD type. Treated individuals, offenders and MDOs, have improved outcomes (reduced reoffending rates; e.g. [9, 10] as will be expanded upon below. This is also the case for pharmacological interventions which have been shown to reduce reoffending in a national register study of 82 647 patients [11].

1.3 Forensic Psychiatry

Forensic psychiatry is a subspecialty of clinical psychiatry which requires special legal and criminological knowledge as well as experience in the treatment of often complex and multiple mental disorders. While the US tradition focuses on the role of the forensic psychiatrist in the legal context and includes civil law matters [12], European forensic psychiatry takes a slightly different perspective, emphasising the treatment of mentally disordered offenders (MDOs). Gunn and Taylor argue that issues of victimisation and deprivation are essential to engage with in order to both help those affected and to prevent future harm [13]. They define forensic psychiatry as: *“a specialty of medicine, based on a detailed knowledge of relevant legal issues, criminal and civil justice systems; its purpose is the care and treatment of mentally disordered offenders and others requiring similar services, including risk assessment and management, and the prevention of future victimization.”* (p.1).

The specialty is primarily concerned with individuals who have either offended or present a risk of doing so, and who also suffer from a psychiatric condition. These MDOs almost invariably have histories of psychosocial deprivation, including poor parenting, frequent changes in caregivers, having being in care, having suffered abuse, poor education, and unemployment, to name but a few [14]. They commonly have histories of substance misuse

and have often had multiple admissions to psychiatric services as well as previous contact with the criminal justice system before coming into forensic-psychiatric care [15].

Due to their backgrounds, namely their offending histories, MDOs are often cared for in secure environments, either in prison or in dedicated forensic-psychiatric hospitals. These institutions are high cost-low volume services that may detain their clientele for long periods of time in highly restrictive conditions (for a review of length of stay in forensic psychiatric institutions see [16]). The purpose of this detention is seen as twofold: care and treatment for the *patient* (for their own sake as well as in order to reduce future risk) and protection of the public from harm from the *offender*. This dual role can cause dilemmas for the practitioner as described by Robertson and Walter for psychiatry as specialty as a whole, though this is more acutely felt in the forensic context: *"In psychiatric ethics, the dual-role dilemma refers to the tension between psychiatrists' obligations of beneficence towards their patients, and conflicting obligations to the community, third parties, other health-care workers, or the pursuit of knowledge in the field. These conflicting obligations present a conflict of interest in that the expectations of the psychiatrist, other than those related to patients' best interests, are so compelling. This tension illustrates how the discourse in psychiatric ethics is embedded in the social and cultural context of the situations encountered. It appears that as society changes in its approach to the value of liberal autonomy and the 'collective good', psychiatrists may also need to change"*. [17] (p.228).

1.4 The role of a forensic psychiatrist

As is the case in all medical specialties, it is the medical doctor whose duty it is to bring clinical leadership to forensic psychiatry [18], and to have a pivotal role in defining service delivery for MDOs and others requiring similar services on a more general level [19]. Thus, although legal and clinical frameworks differ across Europe, forensic psychiatrists have similar roles, such as

- providing treatment for severely mentally ill people who offend,
- working effectively at the interface of law and psychiatry, and, in so doing, working with other clinical and non-clinical professionals in the field,
- providing reports and giving evidence to courts, and
- assessing and managing the risk of MDOs and preventing reoffending.

In order to fulfil these roles, forensic psychiatrists must have specialist knowledge and skills, namely in the assessment and management of complex mental disorders, violence and sexual

deviance, and the risks that these behavioral phenomena pose. To this end, the forensic psychiatrist must be able to incorporate academic and clinical skills, techniques and research developed in neighboring disciplines, such as youth, adult, and geriatric psychiatry, psychology and criminology [20]. Furthermore, the forensic psychiatrist must adapt to the role of being an objective evaluator in addition to providing psychiatric care to patients [21]. However, although forensic psychiatrists may cross the border from empirical medical science into the court room and may act on behalf of courts or administrations when they treat their patients, the patient is still at the core of what they do. This notwithstanding, forensic psychiatrists are interpreters of medical and psychological findings for judges, prosecutors, lawyers and administrators, so that they can, in turn, better understand them and apply relevant legislation accordingly. It is vital that forensic psychiatrists are, however, aware of the risk that their dual role could become unduly slanted towards the legal framework they operate within, rather than by their medical ethics. Thus, as is stipulated for all healthcare professionals, forensic psychiatrists are ethically bound by the standards set by their professional bodies and, indeed, judged to be guilty of misconduct if they deviate from these standards due to pressures from the courts, penal institutions or other societal interest groups [22]. This robust professionalism [23, 24] also includes refraining from commenting on issues beyond their expertise or that breach confidentiality.

These elements inherent in the role of the forensic psychiatrist are even more pronounced in leadership positions. By deciding on issues such as referral, discharge, recall and triage criteria [25, 26] and appropriate levels of security [27], directors of forensic units are, in effect, participating in defining which behavioral issues that society faces should be treated within general psychiatric services, forensic services or the penal system, i.e. how society's forensic population is to be demarcated. To this end, forensic psychiatrists' roles inevitably require restricting a person's liberty, at least in the short term, and thus present the clinician and society in general with many inherent clinical and ethical challenges. However, ultimately, the basic aims of care delivery in forensic psychiatric settings are essentially the same as in the community and in medicine in general: to diminish pain and suffering and empower the individual to function healthily and freely in society.

1.5 A European perspective on forensic psychiatry

Forensic psychiatry operates within the legal and societal context of a country and is therefore subject to the wider influences and trends of that society, e. g. the attitudes towards offenders - exclusion or incapacitation on the one hand or offender rehabilitation on the other. Laws – rules that guide human behaviour – differ from the scientific frameworks clinicians are

otherwise used to dealing with in that they are man-made and normative, and as such can be changed at any time. The rules relevant to the detention of and care for MDOs differ widely across Europe though there is some common ground [28, 29].

All European legislations recognise the concept of criminal responsibility as a prerequisite for punishment. Individuals who lack responsibility for the act they have committed are therefore exempt from punishment which usually results in admission to a treatment facility (or acquittal) rather than punishment. Most, but not all, countries recognise some grading of that responsibility, that is an individual is not only seen as either fully responsible or completely irresponsible for their actions but can be of *diminished* responsibility. Such diminished responsibility, where it is recognised, can then result in a less severe punishment, i.e. a shorter sentence of imprisonment.

Most European countries require some degree of reduced responsibility for entry into the forensic-psychiatric system while individuals with full responsibility for the crime committed will be subject to punishment, even if they did suffer from a mental disorder at the time of the act. However, in some countries, e.g. the UK, access to forensic psychiatric care is independent of criminal responsibility and determined only on the basis of the mental condition at the time of *assessment*. A number of national laws within Europe provide exclusion criteria for detention in a psychiatric, including forensic-psychiatric hospital, e. g. personality disorders, substance use disorders or sexual deviancy. This may be welcome from a civil liberty perspective as it means subjecting fewer people to the restrictions of compulsory psychiatric care and detention; on the other hand, such exclusion might also result in a lack of service provision for those in need.

Given the above, it is not surprising that rates of detention within the EU vary widely from country to country. This is apparent in figures of imprisonment where Eastern European countries show imprisonment rates of over 200 per 100 000 inhabitants; England & Wales takes the lead amongst Western European countries with nearly 150 whilst lowest imprisonment rates are found in Northern European countries with figures ranging from about 40 to 70 per 100 000 [30]. Figures for forensic-psychiatric beds are more difficult to obtain. Salize and colleagues compared forensic bed rates in 15 EU countries and found variations from 0.8 / 100 000 (France) to 13.1 / 100 000 (Germany) [28]. Only one other country (Belgium) reported more than 10 beds / 100 000 while six countries indicated figures of less than 5 / 100 000 (Austria, Greece, Ireland, Italy, Portugal and Spain). For Eastern European countries, Mundt and colleagues described a mixed picture with increases in forensic bed numbers between 1999 and 2009 in some countries (e.g. Hungary, Poland) and decreases in others

(e.g. Czech Republic, Latvia) [31]. Chow and Priebe [32] provided more up to date figures for eleven Western European countries describing changes in bed numbers from 1990 to 2012. In all countries forensic bed numbers / 100 000 increased, in some cases dramatically. E.g., Austria, Belgium, Ireland and Germany all started with less 5 / 100 000 in 1990 but at the end of the study period had between 8 and 12 forensic beds / 100 000 population. Countries with lower numbers, under 3 / 100 000 throughout, were Italy, Spain, Switzerland and the UK. During the same period, general psychiatric beds decreased while places in other institutions, including protected housing and prisons, also increased though the authors could not evidence a causal link between these different trends (which was suggested to exist in the so-called Penrose hypothesis).

Most countries allow detention of MDOs beyond the length of prison sentence their offence would have attracted had they been imprisoned [33]. However, some – Croatia, Italy, Portugal – limit the time of psychiatric detention to the time the individual would have served had they not been mentally disordered and had received a custodial sentence. In other countries (e.g. Germany) it is recognised that the longer the detention in a forensic-psychiatric facility the more relevant considerations of proportionality become with the patients' right to freedom being balanced against any risk they may pose [29].

Outpatient services for forensic patients are available in some countries though information about its use is patchy. Salize and Dreßing [34] note that outpatient services are available in four countries: Austria, Belgium, Germany and the Netherlands; since their publication they have also been introduced in the UK [35] and in Poland [36].

2. METHOD

We undertook a rapid review of the literature regarding the topics relevant to this paper as described in 1.1 Aims. Rapid reviews are an emerging form of knowledge synthesis aiming *'to inform health-related policy decisions and discussions, especially when information needs are immediate'* [37]; *'components of the systematic review process are simplified or omitted to produce information in a short period of time'* [38]. Despite the somewhat truncated process, rapid reviews maintain the key steps of a systematic review in terms of identification of a research question and search strategy and identification, screening, selection and summarising of relevant studies [38]; and they have been found to maintain the essential conclusions compared to those produced by a full systematic review [39].

We undertook a literature search based on the following concepts: forensic psychiatry, review articles, randomised controlled trials and best practice. Both textword and MeSH categories were used as search terms in the following databases: Medline, Embase, PsycINFO, and the Cochrane library. Searches were conducted for a timeframe from 2000 onwards for adult groups only. No restrictions were placed on language or publication type. Included publications were scrutinised for additional relevant literature, including earlier publications of interest. Please see Table 1 for the full search strategy.

In addition to bibliographic databases, we searched the websites of relevant professional organisations for policies, statements or guidance of interest: European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment, European Cooperation in Science and Technology, European Psychiatric Association, National Institute for Health and Care Excellence, Royal College of Psychiatrists and the World Psychiatric Association.

We have written to the forensic sections of psychiatric membership organisations of the EPA for comments on the topics covered in this paper as well as to enquire about any guidance papers that might exist on forensic psychiatry in their countries. The response was limited and resources did not allow the translation of national guidance documents. We have also consulted the individual members of the Forensic Section of the EPA, who made additional comments on content and relevant literature as well as commented on guidance in their countries. The final version of the paper was approved by the Board of the EPA Forensic Section.

3. RESULTS

3.1 Results of searches

In total, 6310 references were retrieved from Psycinfo (n = 1377), Medline (n = 2271), Embase (n = 2265) and Cochrane (n = 9). This was reduced to 4422 after deduplication. Initially 170 abstracts and summaries were identified for inspection, from which 117 papers were selected for further consideration. An additional 71 reports and papers were identified during the website searches and downloaded for consideration.

Forty-five papers from the database searches and 16 documents from web searches were selected for inclusion of which the main themes were treatment/intervention (n = 25), prison psychiatry (n = 11), risk assessment (n = 7), service provision (n = 4), community treatment (n = 3), liaison/diversion (n = 2), European perspectives (n = 2), outcomes (n = 2), ethics (n = 2),

role of the psychiatrist (n = 2) and models (n = 1). However, several papers were relevant to multiple themes. The scientific papers and guidance papers we identified through the searches are indicated in the references list with one asterisk (*).

3.2 The forensic psychiatrist as expert witness

As outlined above, the role of a forensic psychiatrist may include acting as expert witness in court, providing evidence on issues of criminal responsibility, treatability and risk of violence. The determination of criminal responsibility is in many countries the most usual form of assessment requiring forensic expertise. This typically involves the identification of any mental disorder the examinee might suffer from and determining whether this disorder was present at the time of the crime. Furthermore, it will be necessary to assess the impact of the examinee's mental state at the time of the offence on his or her capability to appreciate the legal wrongfulness of the act and/or his/her ability to act accordingly [40, 41]. Given the significant implications such assessments might have for the person assessed, it is essential that reports provided to court are carried out to high standard and within an ethical framework [42]. Various national medicolegal authorities [43-45] and The World Psychiatric Association have provided guidance on such work [46]. These include guidance on the various stages of the process, from the request to provide a report to gathering evidence and interviewing the examinee, the structure of the report and the subsequent appearance in court. Details can be obtained on the WPA website, though the key principles of the guidance include:

- Clarity needs to be sought with regards to the details of the request to provide a medico-legal report, including its legitimacy and whether it falls within the expert's area of expertise.
- The expert is obliged to provide an unbiased report and not act as an advocate for the examinee. The WPA guidance therefore recommends that the medico-legal expert should not be the treating doctor of the examinee (though others having taken a different view, e.g. [47]).
- Prior to working on the report, the expert should obtain the agreement of the examinee, based on informed consent, including informing them of the consequences of cooperating or not cooperating. It is important that the examinee understands that the process is different to a therapeutic consultation and that no treatment will be provided by the expert.
- Principles of confidentiality do also apply in this context and any information not relevant to the purpose of the report must not be disclosed.

- The report should be based on sufficient information and all relevant information on which the conclusions rely upon should be disclosed. It is desirable to obtain third party information.
- The assessment should be undertaken in person.
- The report should explain any medical terms used so that its content is comprehensible to non-medically trained readers.
- Regarding the use of any instruments, including for risk, the expert needs to be aware, and make clear in the report, their applicability to the case assessed and any other limitations of their use.
- Guidance is also provided as to the structure and detailed content of medico-legal reports though it is beyond the scope of the paper to repeat this here. Importantly, it is highlighted that a report does not just consist of listing the facts and results of any examinations but should provide a formulation, an explanatory synthesis of the case, offering a biopsychosocial explanation of the presumptive causative factors in the examinee's offending and risk.
- It is important that the expert highlights any uncertainties of the case and any inconsistencies between subjective report and objective findings and how this may impact on the final opinion.

Specific guidance regarding feigning of symptoms is provided by Gottfried and colleagues [48]. This emphasizes the importance of collateral information. No instruments exist to evaluate retrospective feigning of symptoms at the time of crime, and the use of general malingering measures such as the Structured Interview of Reported Symptoms is recommended.

Finally, it is important for the expert to be aware that they are there to advise the court but the ultimate decision, e.g. regarding criminal responsibility, is determined not by the expert but by the court.

In most work carried out as a forensic psychiatric expert witness, it is essential to refer to the use of formal assessment tools (see Risk). The assessment of issues such as legal and functional mental capacity, various forms of behavioral risk and recommendations for discharge, have also been rendered more amenable to research and scientific enquiry [49] by the use of validated actuarial and structured professional judgement tools, thus providing a more justified basis for expert evidence and legal decision making in the context of, arguably, increasingly risk-conscious European societies [50, 51].

3.3 Risk

Thorough assessment of risk and protective factors is crucial for risk appraisal and the prevention of recidivism. Risk assessments are required both in the context of providing expertise to courts as well as in the planning of interventions for MDOs. The risk principle of the Risk Needs Responsivity (RNR) model necessitates having reliable and valid risk assessments to assign individuals to treatment programmes based on their risk [52].

Risk can be assessed using unstructured clinical assessments, actuarial risk assessments (ARA) and structured professional judgements (SPJ) [53, 54]. Unstructured assessments are subjective and have demonstrated poor predictive ability [54]. ARAs and SPJs have been developed to improve the predictive validity of risk measures. In ARA, a set of risk factors is statistically combined in a fixed, mechanical way, often then providing a numerical outcome regarding the likelihood of, e.g., future violence [54-56]. SPJ approaches moved away from the reliance on static variables to include also dynamic variables and give professionals the flexibility to modify the overall risk level [57]. Dynamic factors may be amenable to treatment and therefore SPJs can be used to identify and inform treatment targets. For example, the Violence Risk Scale (VRS) (e.g., [58] contains six static and 20 dynamic risk factors. The HCR-20 (now Version 3; [59]) contains 10 static, historical factors and 10 dynamic factors, five pertaining to recent clinical functioning and five considering future risk management. Empirical evidence suggests that both ARA and SJP perspectives have similar predictive validity [56, 60]. Coid and colleagues drew similar conclusions but also found that, in respect to men, actuarial measures outperformed SPJs in predicting violent reoffending [61].

Pre-treatment ratings on the dynamic factors can be used to represent treatment targets and post-treatment ratings can be used to assess progress, but only if these dynamic factors not only have predictive validity but changes in these factors tap into the causal mechanism of criminal behaviour and result in changes of behaviour [62]. Causal instead of predictive models should therefore be preferred in the implementation of clinical risk management [63].

There are a large number of specific risk assessments tools in use. A systematic review of the literature [64] identified 80 different variables used in the measurement of violent or sexual recidivism and 20 formal assessment instruments. A review of surveys on the use of violent risk assessment tools, published between 2000 and 2013, identified nine surveys, mostly from the US and the UK [65]. A more recent global survey of 44 countries reported the use of 400 instruments [55]. The HCR-20 [Version 2: 66; Version 3: 59] was identified as the most

commonly used instrument both in Europe and internationally in both studies, followed by the Psychopathy Checklist Revised (PCL-R) [67].

A meta-analysis of violence risk assessment tools, reviewing 68 studies pertaining to nine different risk assessment tools, found that the Psychopathy Checklist Revised (PCL-R) produced the lowest rate of predictive validity; however, it is of note that this instrument was designed as a clinical rather than a risk assessment tool [68]. The highest rates of predictive validity were found in instruments designed for specific rather than more general populations, e.g. for sex offenders, and in older and in predominantly white samples [68]. Additionally, neither ARA nor SPJ measures produced better levels of predictive validity. However, from a clinical point of view, the flexibility afforded by SPJ approaches along with its potential utility in treatment planning has led to a preference of practitioners of these approaches. In criminal justice settings, the picture is slightly different though, with ARA measures being used more widely, in particular in the assessment of sex offender risk [69]. For sex offender risk assessment, this preference is supported by a review of 118 prediction studies [70], concluding that ARA measures outperformed SPJ approaches in the prediction of sexual recidivism.

There are concerns about the high number of false positives — individuals who incorrectly are considered having a high risk of reoffending — which may lead to additional treatments or restrictions to liberty. Consequently, a further systematic review explored the predictive accuracy of the most commonly used risk assessment instruments [53]. The review found that tools are effective at screening out individuals at low risk of reoffending but only have low to moderate positive predictive value [53]. Fazel and colleagues stated that “even after 30 years of development, the view that violence, sexual, or criminal risk can be predicted in most cases is not evidence based.” (p.5) [53]. The review concluded that the tools perform moderately well for informing treatment but are limited if used as the sole determinant of sentencing or release decisions [53]. The need to be cautious in the use of risk assessment instruments for individual clinical decisions is compounded by the low and varying base rates for violent recidivism in the local population of which the assessed person is a member and the assessed person is compared with [71]. Caution is also warranted in the application of risk assessment tools in specific populations such as women (e.g. [72]) or those with intellectual disability [73] as psychometric properties might vary across groups.

Forensic risk assessment models generally focus on risk rather than protective factors [74, 75]. Therefore, others have sought to emphasise protective factors [76]. For example, the 17-item Structured Assessment of PROtective Factors for violence risk (SAPROF) [77, 78] was

developed to be used alongside the HCR-20. The SAPROF may also have predictive validity for sexual offending as well as other violent offending although more evidence is required [79]. Although their predictive validity seems not to outperform the validity of risk focused assessment tools, strength based tools may improve the predictive validity of risk oriented approaches and contribute to the desistance from crime [79]. Consideration of protective factors is consistent with clinical practices such as rehabilitation and recovery and may have a positive effect on the motivation to participate in treatment [57]. This consideration is underlined by a study from Abbiati and colleagues [80] in which, in contrast to previous findings, none of the subscales of the SAPROF showed predictive validity, except for 'Motivation'. Although the use of protective factors in assessing risk is in its infancy, the evidence base is limited and some authors state that the relevance of these factors can be found elsewhere, like the development of a therapeutic relationship, the influence of protective factors deserves more scientific attention [81].

Violence risk assessment is a global phenomenon, yet its utility in clinical practice has not been evaluated thoroughly. E.g., Singh et al's survey found that, overall, raters received feedback about the outcome of their assessments in fewer than 40% of cases; where assessments were completed to inform management plans, feedback was available in fewer than 50% of cases and only in a third of cases were the plans implemented [53]. Obviously, risk assessments will only reduce violence if they are communicated and related plans implemented. More research is therefore needed regarding any obstacles in these areas. It also remains largely untested as to whether embedding risk assessment and formulation into clinical care prevents recidivism; the only RCT in this area so far [82] suggests this may not be the case.

3.4 Treatment settings for mentally disordered offenders

Treatment for MDOs is provided in a number of settings - in the community, either as diversion from custodial sentences or following release, in secure forensic-psychiatric hospitals of different security levels, and in prison. Some countries have developed diversion schemes which allow for the early detection of mental disorder, e.g. at the time of arrest or at appearance in court [83]. This will then allow to either divert the person to the health system without the involvement of the criminal justice system or for the court to take the individual's mental health needs into account when dealing with the case. Liaison and diversion services¹, usually staffed

¹ In the US a similar development took place with the introduction of Mental Health Court but to our knowledge no such courts exist in Europe, although they have been piloted in the UK (www.ohrn.nhs.uk/resource/policy/MentalHealthCourts2010.pdf).

by mental health nurses and based either in police stations or at court, provide screening, assessment and onward referral, or in some cases further support and management. Such schemes have been found to improve mental health and reduce the risk of re-offending and are therefore recommended for implementation (for a review see [83, 84]. Effective coordination of the different agencies involved is key to the success of these services [85].

3.4.1 Treatment in the community

In the community, individuals with offending histories should have access to the same services as their non-offending fellow citizens though some aspects of this treatment may not be voluntary. For example, individuals may serve a community sentence with the requirement to attend for mental health or substance misuse treatment. Equally, there are those who are released on licence (conditionally released) and part of their licence conditions may be to attend for particular treatments.

The importance of community services for MDOs is demonstrated by studies investigating the prevalence of mental disorders in offenders in the community. Looking at probation supervisees at various stages of engagement, Brooker and colleagues found that 15% had had contact with mental health services in the preceding 12 months and 27% had been seen by mental health services at some point in their lives [86]. Furthermore, an assessment of needs in probation service areas and prison establishments in England and Wales found 45% of offenders had emotional well-being needs [87].

However, there are some challenges in providing psychiatric services for offenders in the community. Firstly, many have a complex mixture of social disadvantage as well as psychiatric problems [88] and, in common with other such socially and psychiatrically disadvantaged populations, they either do not access available services or, if they do so, such access is intermittent and crisis driven following an overdose or injuries received in a fight [89]. For instance, Brooker et al found that nearly 39% of offenders had visited an accident and emergency department or an NHS walk in centre at least once in the previous 12 months [86]. Secondly, in countries where services are diagnostically defined, MDOs may be disadvantaged as they may present with a range of sub-threshold pathologies which may not meet the service criteria for individual services. For instance, they may have had brief psychotic episodes, but not schizophrenia, and hence may not be accepted by a Community Mental Health Team. Similarly, they may have borderline intelligence or mild learning disability with not severe enough problems to meet criteria for learning disability services. The same is the case for substance misuse where MDOs may abuse a range of substances without

developing dependency for any specific one and therefore they may not be able to access substance misuse services. In addition, MDOs often suffer from personality disorders, a diagnosis sometimes excluded from psychiatric services though changes have been made in this respect in recent years [90].

It is not clear which model works best for MDOs in the community and whether compulsion produces better outcomes. Given the complex needs of MDOs, assertive outreach models (Assertive Community Treatment, ACT) of care have been applied to this patient group. Jennings reviewed the evidence of such models, adapted for forensic populations, and concluded that there was evidence for improvement in mental health but not offending outcomes [91]. They recommend the provision of extended residential treatment with a focus on life skills and treatment continuity prior to implementing ACT. A recent systematic review of ACT trials, including 11 studies (3 RCTs, none based in Europe) also found only limited support that ACT adapted for forensic populations improves forensic outcomes [92].

Community treatment orders (CTO) allow for compulsory treatment in the community, usually following discharge from a hospital setting. However, research has failed to produce convincing evidence that CTOs are superior to treatment as usual in terms of readmission rates and other health outcomes (for a review see e.g. [93, 94]) and Kisely and colleagues found that 238 CTOs would be needed to prevent one arrest [95].

3.4.2 Treatment in forensic-psychiatric in-patient settings

While provision of care in psychiatric settings is considerably more resource intensive than in prison, there is some evidence from a systematic review of patient outcomes following discharge from secure psychiatric hospitals that reoffending rates are lower when compared to released prisoners [96]. Nevertheless, the major predictors of recidivism in MDOs have been shown in a meta-analysis to be the same as for non-MDOs [97] suggesting that general criminogenic needs might be more relevant in predicting outcome than mental disorders.

While it is possible for MDOs to be treated in general psychiatric settings in many countries, they are usually admitted to specific forensic-psychiatric settings. A number of countries have found forensic treatment beds to reduce in number, others have described an increase [98]. In England and Wales, e.g., the forensic-psychiatric population has increased by 45% between 1996 and 2006 and the length of stay has also risen. A recent study found that up to a quarter of patients could be classified as 'long-stay' (length of stay more than 10 years in high or more than 5 years in medium secure care) and some have little prospect of being released which

poses significant ethical issues [99]. Most countries provide forensic care at different levels of security, reflecting the risk the patient poses [28]. While such levels of care can facilitate care being provided in the least restrictive setting, they can also lead to inefficiencies and waiting times, particularly where these different security levels are provided in completely separate institutions as is the case, e.g., in England & Wales.

Services may also differ in terms of the patient groups they cater for. While in the Dutch forensic-psychiatric system the majority of patients are diagnosed with a personality disorder, other countries have been more reluctant to cater for this group. In England and Wales a pilot service was developed in the early 2000ies for individuals with so-called Dangerous and Severe Personality Disorders (DSPD), established partly in prison and partly in high secure hospitals [100]. However, this service has now been decommissioned and there is an expectation that interventions for personality disordered offenders are provided within the criminal justice system.

Given the complexity of presentations of MDOs, the assessment of the effectiveness of treatment in such institutions is also highly challenging. In addition to specific interventions, which will be addressed below, attention has to be paid to the therapeutic milieu of the institution itself. Given the nature of the population, security is an important element of care and can be divided into structural or environmental, procedural and relational aspects [101]. Tapp and colleagues undertook a Delphi survey to identify the key elements of high secure care [102]. In addition to the different elements of security, experts reached consensus on some specific medical (clozapine), psychological (CBT based interventions) and social interventions (e.g. off-ward activities) as well as general elements of care delivery (multidisciplinary working, patient involvement) making a positive contribution to care in round one of the survey. However, no consensus was reached on which of these aspects are *essential* elements of care in any of the subsequent survey rounds. The same author group undertook a systematic review of high secure care [103] identifying 22 studies (13 European). Evidence for effectiveness was found for high secure care itself, third wave cognitive-behaviourally based interventions, psychoeducation and antipsychotic interventions; however, the evidence base is weak given that mainly small, single, non-RCT studies contributed to the review.

3.4.3 Prison psychiatry

Even in countries where specialised institutions exist that allow for the redirection of MDOs from the criminal justice to the healthcare system, most offenders with mental disorders are found in prison settings. The high prevalence of mental disorders has been described in

numerous studies from different countries. Fazel and Danesh synthesized the findings from 62 surveys including nearly 23 000 prisoners from 12 countries, including nine in Europe [104], and found that 3.7% of men (4% of women) had a diagnosis of psychotic illness, 10% of major depression (12%), and 65% of PD (42%, mainly antisocial PD) – rates much higher than those in the general population. For substance related disorders, based on 13 studies (though only three based in Europe) including over 7 500 prisoners, estimates for alcohol abuse or dependence ranged from 18 to 30%, and for drug abuse / dependence from 10 to 48%. The increased risk of suicide in prisoners is of particular concern and is the leading cause of death in penal institutions, especially during the early stage of confinement. An updated systematic review of the prevalence of psychotic illness and major depression examined 109 samples (38 European) including over 33 000 prisoners from 24 countries (14 European) [105]. Overall, similar prevalence rates were found although there was an increase over time in depression in the USA. Suicide rates per 100 000 prisoners have been found to range from 58 to 147 in a review of studies from 12 studies from Western countries (9 European) compared to figures from 16 to 31 in the general population [106].

Prisons are arguably places not conducive to mental well-being. Imprisonment is by its very nature and design associated with the deprivation of liberty, restrictions to one's life style and autonomy, a loss of employment and accommodation, and, importantly, of relationships, including with partners, parents and children. The environment itself may be perceived as harsh and unsupportive and some prisoners, in particular those with sexual offences, may experience bullying and victimization [107]. All these factors contribute to an increase or exacerbation of mental health problems in prisons and therefore call for the implementation of services to address these issues [108].

Whether or not mentally disordered persons should be treated in prison or hospital is a primarily philosophical question and different countries have developed a range of approaches to dealing with the issue of mental disorder and imprisonment. As described above, countries applying the construct of criminal responsibility can prevent mentally disordered persons from being imprisoned and instead divert them to the hospital system. Whether or not transfer of prisoners to a hospital setting is possible depends largely on the legal system of the country. Treatment of an acutely psychotic prisoner can in principle take place within a prison hospital or ward or via transfer to a general or forensic psychiatric hospital. Most European countries rely on a number of these options [109] though some have one option available only (e.g. treatment only in prison hospitals in Belgium and Lithuania or exclusively via transfer to a forensic-psychiatric hospital in Ireland).

For those prisoners treated within penal institutions (whether or not hospitalized within the prison system), the principle of 'equivalence' with therapeutic provision matching that of care in the community according with the development of psychiatric care in each country, should prevail as has been mandated by a number of European and international conventions and recommendations though it is doubtful whether the majority of prisoners with mental disorders receive such care. In addition to funding and organisational issues, there are also challenges with regards to the evidence-base of treatments in prisons, not least due to the significant hurdles associated with running trials in these settings [110].

A number of international rules are applicable to the treatment of prisoners. Of these the United Nations Standard Minimum Rules for the Treatment of Prisoners [111] as well as the UN Convention on the Rights of Persons with Disabilities [112] are of most relevance worldwide. Within Europe, the Council of Europe has developed recommendations on the ethical and organizational aspects of healthcare in prison (Recommendation No R (98) 7) [113] while the European Prison Rules (Recommendation Rec[2006]2) [114] specify that prison conditions must not infringe human dignity; life in prison should approximate life in the community (including equivalent healthcare) with restrictions only applied to the minimum necessary. Furthermore, prisons should offer meaningful occupational activities and treatment programmes, preparing for reintegration into society. The European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment [115] visits places of detention, including prisons, and has also developed some standards for prison, e.g. regarding health-care provision, living space per prisoner, solitary confinement and the situation of life-sentenced prisoners.

In addition, a number of professional organisations have developed guidance documents touching upon prison psychiatry, though these are by their nature recommendations and not legally binding, e.g. the World Medical Association (esp. Declaration of Tokyo 1975) [116], the World Psychiatric Association (esp. Declaration of Hawaii 1977) [117] and the International Council of Prison Medical Services (Oath of Athens) [118]. More detailed guidance for doctors working within the prison system is available in the consensus paper on prison psychiatry from the forensic section of the World Psychiatric Association [119, 120] which stipulates:

- The principle of equivalence must prevail – prisoners must not be discriminated against for being imprisoned and hence should have access to specialist mental health treatment – based on a multidisciplinary team approach - including pharmacological and psychological interventions, day-care, substance misuse treatment and in-patient treatment.

- Individuals should not be excluded from accessing such treatment on the basis of specific diagnoses or behaviour associated with such diagnoses, e.g. personality disorders or substance misuse.
- Prisoners with serious mental disorders should either be transferred to a suitable treatment facility outside prison or treated in a hospital wing within the prison.
- All prisoners should be screened for mental disorders, including substance misuse, using a recognised, standardised tool, upon reception by appropriately trained personnel following a written procedure which outlines what actions need to be taken as a result of the screening as necessary.
- Except for in emergency situations, consent to treatment must be sought and prisoners who have the capacity to make informed treatment decisions must not be treated against their will. This includes situations of self-inflicted harm, including hunger strike.
- Coercive measures, including forced medication, restraint, seclusion and solitary confinement must be reduced to an absolute minimum. Clinicians must not use any of these measures as a form of punishment and individuals subject to coercive measures must be closely supervised to identify any ill effects of the intervention. The use of these measures should follow written policies and procedures and be documented and monitored (see also [121]).
- Principles of confidentiality also apply to prisoners and the treating physician must not disclose confidential information to the prison authorities or any other agencies without patient consent unless there is a clear legal provision to do so within the country.
- Mental health teams in prisons should carefully plan for a prisoner's release by making links to community services in good time and arrange for a full handover to take place.
- Prisons should consider the specific needs of vulnerable or marginalized groups which may have specific mental health needs, including women, ethnic minorities, immigrants, juveniles and sex offenders.
- The prison should be committed to mental health promotion and training of staff to raise awareness of mental health issues and to minimise stigmatisation (see also [122]).

Specifically for the prevention of suicide, the International Association for Suicide Prevention Task Force on Suicide in Prison [123] has developed recommendations which provide helpful guidance, emphasizing the need for training correctional staff to recognise suicide risk, the importance of the general prison environment, including initiatives to reduce victimization, good communication between staff and inmates, procedures for screening inmates for suicide risk and for the observation of suicidal inmates, adjustments to the built environment, e.g.

removal of ligature points, procedures for the distribution of medication, debriefing after a suicide has occurred, and providing sufficient resources for an effective suicide prevention strategy.

3.5 What works for mentally disordered offenders

Caring for MDOs requires simultaneous consideration of: a) the needs for treatment resulting from specific elements of the mental disorder and b) the needs for treatment with respect to factors promoting criminal behaviour. Therefore, treatment programmes require multiple components to address the complex needs of MDOs [124]. However, people are exposed to various treatment agents and environmental influences and so it may not be feasible to conduct rigorous controlled studies to assess the efficacy of specific treatments [124].

3.5.1 Psychological interventions

Correctional treatment was viewed negatively in the 1970ies when the findings from Martinson's paper "What works?" [125] contributed to the popular view that "nothing works", a view which endured through the 1980s [126]. Treatment programmes for MDOs are informed by programmes for non-mentally disordered offenders and this evidence base at the time was limited. Treatment programmes for MDOs in secure settings were poorly designed, implemented and evaluated [127]. Since then, evidence has been provided for violence reduction programmes and sexual offending programmes though in particular the evidence for the latter is hotly debated still, and some argue the investment is not justified given the relatively narrow margin of difference compared to non-treated populations.

The risk-need-responsivity (RNR) model [52, 128] has been an influential model of offender assessment and rehabilitation. As suggested by its name, it is based on three principles: 1) the *risk principle* asserts that criminal behaviour can be reliably predicted and that treatment should focus on higher risk offenders; 2) the *need principle* highlights the importance of criminogenic needs in the design and delivery of treatment; and 3) the *responsivity principle* describes how the treatment should be provided. Despite the evidence base for the principles of the RNR model in reducing recidivism, treatments for MDOs often do not adhere to its principles [129]. Therapies are often adapted in content or delivery style to meet the needs of individuals or groups of individuals [130]. These adaptations fit with RNR principles but heterogeneity can make evaluating the efficacy of such therapies more difficult. In addition, manualised treatments can restrict the ability to address the responsivity principle [131].

Other models include the strengths-based good lives model (GLM), which focuses on improving how the offender functions as a person by enhancing his or her capabilities to attain goals, or primary human goods, through socially acceptable means [132,133], and is applicable for MDOs [74, 134]. Andrews and colleagues defended the principles of the RNR model and rebutted criticism of the model by proponents of the GLM model [135]. For example, they argue that the RNR model does consider motivation and the strengths of the offender

A number of reviews have addressed the effectiveness of psychological interventions for MDOs, focusing on outcomes related to antisocial and offending behaviours. McGuire reviewed interventions for reducing aggression and violence and concluded that personal violence can be reduced by psychosocial interventions which include approaches such as social problem-solving and interpersonal skills [136]. The RNR model was advocated to improve targeting [136]. McGuire called for more RCTs to improve the evidence based but also highlighted the need for practical trials [136]. RCTs should be registered at inception and reported to a sufficient standard [137].

A more recent review of interventions for reducing aggression and violence found that modified forms of Reasoning and Rehabilitation (R&R) in forensic settings had completion rates approaching 80%, and that R&R and Cognitive Behaviour Therapy showed the most promise [138]. However, outcomes are often assessed over short periods and there is little evidence of the long-term outcomes [138]. The one, small scale, RCT of a R&R cognitive skills programme for MDOs within Rampling and colleagues' review found lower levels of verbal aggression but no difference in violence compared to MDOs who received treatment as usual (TAU) [139]. However, half did not complete treatment and completers fared better than non-completers [139]. Other authors have described that starting but not completing treatment results in worse outcomes than never starting treatment at all [9,10].

Therapies which help to improve an individual's engagement and communication skills can be beneficial before addressing offence related programmes. For example, cognitive remediation therapy has been shown improve working memory, processing speed and attention in people with schizophrenia [140]. Other therapies such as music therapy, which encompasses a variety of music making interventions, have been associated with improvements in communication, social skills and confidence [141,142]. For example, prisoners who have not engaged in other therapies have participated in music therapy but its efficacy has not been evaluated in an RCT [142].

A systematic review of interventions for women offenders found that interventions which address early trauma and comorbid substance misuse had the most utility [143]. Bartlett and colleagues described the need for more robust evidence and more studies of community settings where most women offenders are based [143]. Moloney and Moller outlined good practice on the mental health of women in prison settings and also identified the importance of trauma-focused work to help meet the needs of women [144].

Looking at interventions for specific offences, the CBT-based Sex Offender Treatment and Evaluation Project (SOTEP; [145]) was well-designed, comprehensive and long-term, yet, found no difference in the rate of reoffending between the treated and the control group [146]. Post-hoc analyses found that individuals who met the SOTEP programme's treatment goals had lower rates of reoffending than those who did not [147]. However, systematic reviews of psychological interventions for sex offenders have called for more methodological rigour [146, 148, 149] and further randomised trials [146]. Recommendations included not including people who have dropped out of treatment as controls [148]. A meta-analysis of psychological treatments for sexual offenders against children found studies with acceptable methodologies did not provide evidence of treatment efficacy and poor quality studies raised the effect size [149]. A Cochrane Review of psychological treatments for sex offenders identified ten studies involving 944 men although some excluded MDOs [146]. However, little information was available on the primary outcome of reoffending. The follow-up periods were generally short particularly given that sex offenders have low rates of reconviction and need to be followed up for sufficient time. A recent review of the prison-based Core Sex Offender Treatment Programme (SOTP) on the re-offending in England and Wales reported disappointing findings with little or no difference in reconvictions between treated and untreated sex offenders. Mews and colleagues found that treated sex offenders were significantly more likely than matched controls to be reconvicted of a sexual offence and more likely to be reconvicted of a child image offence, with an average follow-up of 8.2 years [150].

Interventions aimed at specific disorders have been reviewed in a number of meta-analysis. For example, Yoon and colleagues identified a modest effect for CBT and mindfulness-based therapies for depression and anxiety in prisoners [151].

A review of 27 RCTs of psychological treatments for people with personality disorder found some evidence of positive improvements with DBT, emotion regulation group interventions, and psychoanalytically oriented partial hospitalisation for borderline PD [152]. There was also some evidence for CBT for avoidant PD and brief adaptive psychotherapy, short-term dynamic psychotherapy, and manual-assisted CBT treatment for mixed PD [152]. However, Duggan et

al. noted there was much variability in what constitutes TAU [152]. Such methodological differences and sample heterogeneity restricted [152] or prevented [130] meta-analyses being conducted. Consensus on suitable outcome measures would improve the comparability of studies [130]. A more recent review found less evidence in support of treatments for Antisocial Personality Disorder (AsPD) but Wilson and colleagues cautioned about viewing the disorder as untreatable due to the low sample size and likely insufficient power [153]. NICE guidance sets out principles for working with people with AsPD such as having clear pathways in order to provide the most effective multi-agency care [154, 155]. However, others have called for more emphasis on the therapeutic relationship [155, 156]. While some evidence reviewed in this section has been based on non-offending samples, recommendations such as the importance of therapeutic relationships justify their inclusion. Non-completion of psychological treatments for people with personality disorder, particularly borderline PD, is particularly problematic [157]. Strategies are required to build a good therapeutic alliance and different strategies may be required for different disorders [157].

The treatability of psychopathy remains inconclusive [158]. It is essential to evaluate the efficacy of treatments, especially in new services. In England, the government established four pilot sites for offenders with Dangerous and Severe Personality Disorders (DSPD), two in high secure prisons and two in high secure hospitals. Each pilot site was allowed to determine its own treatments. Burns and colleagues, as part of one of the commissioned evaluations of the DSPD service, identified more than 20 different treatments offered across the four sites [159]. All sites offered psychoeducation and psychological skills based treatments. Individuals usually participated first in psychoeducation programmes in order to help the individual understand their personality disorder and become familiar with group work prior to addressing any offence related programmes. However, not all sites offered programmes to address specific types of offending (e.g. sex offences). Criticisms of the DSPD initiative included the initiative being implemented without a consensus on what works [159] and for not selecting one intervention to test in a randomised trial across the hospital and prison pilot sites [160]. Further, follow-up studies were not possible because of the limited time period [161]. The DSPD service has been decommissioned without investigating the post-discharge outcomes of these patients and prisoners. A new offender personality pathway strategy has been implemented in England, placing more emphasis on treatment within the criminal justice as opposed to healthcare system [162]. Again, this was implemented without a thorough evaluation of the evidence base.

Not all treatment modalities have been applied to MDOs; Knabb and colleagues reviewed ten treatment modalities and found many had not focused on MDO populations or were not able

to address the many complexities [163]. However, the generalisations suggested by Blackburn for effective treatment programmes for MDOs remain valid. MDOs present with complex problems which require individualised assessment and treatment formulations and therefore treatment programmes need to have multiple components to address these problems [124]. Conditions are long-term, requiring continuity of support from secure care and into the community [124]. Treatment should also attend to the individual's social functioning and quality of life [124].

3.5.2 Pharmacological interventions to reduce aggression

Research indicates that staff on forensic wards is exposed to aggressive behaviour at least to the same extent as staff on acute psychiatric wards, with unprovoked aggression being particularly prevalent [164]. Preventing aggressive behaviour and the pharmacological treatment of agitation are key elements guaranteeing the safety of both patients and staff. Preventing and treating agitation and aggression in forensic patients should take into account the nature of this group of patients characterised by a chronic course of the disease, long-lasting stays in hospital, complex morbidity and prior aggressive behaviours. Clinical practice indicates that agitation and aggression in this group of patients may be related to a number of factors, including exacerbation of psychotic symptoms, e.g. as a result of discontinuation of medication, drug resistance, impulsive reactions in people with organic central nervous system dysfunction or in those with personality disorders, somatic conditions, or the use of psychoactive substances. Specific factors related to detention in forensic-psychiatric facilities, such as long-lasting hospitalization, conditions of isolation and restriction, uncertain length of stay in hospital and overcrowding also contribute to the escalation of conflicts in the group of patients in long-term confinement.

There is limited research and guidance available regarding the effectiveness of drug treatment in aggression; of relevance here is the National Institute for Clinical Excellence (NICE) guidance on the treatment of violence and aggression though this focusses on short-term management and is not specific to forensic settings [165]. A Cochrane review outlined the evidence for the treatment of aggression and associated impulsivity with antiepileptics [166]. Further guidance is available on the pharmacological treatment of antisocial and borderline personality disorders as described below, though, again, recommendations do not take forensic settings into account separately. Guidance on drug treatment of sex offenders will also be referred to below. Due to this lack of guidance specific to forensic patients, we draw here inferences from the research and guidelines relating to non-forensic patient populations also.

3.5.2.1 Short-term management of aggression

In relation to patients who are acutely agitated and might become aggressive, non-pharmacological interactions, including, in particular, attempts of verbal deescalation or providing an appropriate safe environment should be applied as the first-step procedure; however, if ineffective, pharmacological interventions are recommended [165]. Such acute interventions, often referred to as rapid tranquillisation, aim to calm the patient down without causing sleepiness [167]. Pharmacological treatment commenced early may prevent the application of physical restraint or seclusion, which is traumatic for most patients [168], and may also reduce the risk to staff caring for the patient [169].

First and second generation antipsychotics, benzodiazepine derivatives (BZDs), their combination and other sedatives have been used in the acute pharmacological treatment of aggression. As with other drug treatment, when choosing the appropriate medication, the patient's somatic condition and coexisting diseases have to be taken into account; a sudden deterioration in the general medical condition, including side effects of antipsychotics (e.g. carbohydrate management disorders, electrolyte imbalances, or malignant neuroleptic syndrome), and drug interactions have to be considered as the cause of the agitation. Further considerations include the method of drug administration, the speed of onset of the sedative effect and, if possible, the patient's preference [170].

None of the medications fulfil all the criteria of an 'ideal' anti-agitation medication though recommendations can be made on the basis of effectiveness, tolerability and safety. The recent NICE guidelines on the short-term management of aggression, based on a thorough systematic review of the literature, recommend the use of intramuscular lorazepam or intramuscular haloperidol together with intramuscular promethazine for rapid tranquillisation [165]. It of note that there is no evidence for superior efficacy of the combination of haloperidol and benzodiazepines over the use of one of these drugs alone. Lorazepam is to be used as first choice, particularly if little is known about the patient or they have not had antipsychotic medication before. In people diagnosed with cardiovascular disease or with risk factors of QT prolongation the application of haloperidol and promethazine should be avoided. Previous guidance [171] also supported the use of IM olanzapine which has been found to be effective but carries a risk of serious interaction effects if given concomitant to BZDs (including, among others, hypotension, bradycardia and respiratory depression) [172].

BZDs are widely used in treating agitation resulting from stimulant intoxication, ethanol withdrawal, or when the aetiology of agitation is undetermined. Before using benzodiazepines attention must be paid to the risk of respiratory depression and hypotension, in particular in people with respiratory conditions or those with alcohol intoxication. Therefore, for agitation associated with alcohol intoxication, some experts recommend the use of FGA or SGA over BZDs [172].

After rapid tranquillisation it is necessary to monitor the patient's level of consciousness, and monitor basic observation parameters, including heart rate, blood pressure, temperature and respiration rate, as well possible side effects of the medications used. In forensic (and other) settings rapid tranquillisation might be used alongside other restrictive measures such as manual or mechanical restraint or seclusion. Particular attention is to be paid to observations in these circumstances and restraint in the prone position should be avoided. Individuals placed in seclusion should be observed continuously.

The difference in utilization of non-pharmacological restrictive measures across Europe warrants particular mention; e.g. in the UK the use of mechanical restraint is a rare exception [173] while other countries rarely use seclusion [174]. There seem to be cultural differences at play here as the evidence base to support the use of one over the other of these measures is weak and findings relating to patient preference are also mixed [175].

3.5.2.2 Pharmacological prevention of aggression

In addition to managing acute aggression, pharmacological interventions are used to prevent the occurrence of aggression in the context of different mental disorders. While the evidence and guidance in this area is to a large extent reflective of good clinical management of specific psychiatric disorders, we would like to highlight here the evidence in relation to the treatment of disorders and symptoms particularly associated with aggression. Such treatment does not only benefit patients but it has also been demonstrated that pharmacological treatment of psychosis in prison reduced violent recidivism [176].

Data from numerous studies indicate that the risk of aggressive behaviour in people suffering from psychotic disorders is significantly higher than in the general population as described above. In the group of patients suffering from schizophrenia spectrum disorders (SSDs) pharmacological treatment may therefore reduce the risk of violence [177, 178]. The majority

of available data relates to the use of antipsychotic medications, first and second generation antipsychotics, and relevant guidelines for these disorders should be followed; with regards to the safety profile, the use of SGA seems preferable though some have questioned this conclusion [179-181]. In choosing antipsychotic medications, the anticholinergic burden should also be taken into consideration. Most antipsychotic medications have anticholinergic properties [182], which has been shown to have a detrimental effect on global cognition and limiting the patients' functional capacity and ability to participate in and benefit from psychosocial treatment programmes [183, 184] thus potentially prolonging patients' lengths of stay. Pharmacological interventions should be supported by psychoeducational approaches. Data in forensic settings supports the use of adherence therapy [185] to build awareness of the importance of taking medication and prevent relapse due to stopping the medication [186] particularly as non-adherence to antipsychotic medication has been associated with criminal recidivism [187]. Alternatively, depot medication has been shown to support compliance and promote regular service contact in forensic outpatients with a history of non-compliance and aggression [188].

A significant percentage of patients in forensic psychiatric settings suffer from reduced impulse control and may be prone therefore to incidents of impulsive aggression. This can occur in the context of personality disorders, dementia, intellectual disability or other dysfunction of the central nervous system with various aetiology. Pharmacological prevention of aggression needs to be primarily directed at treating the underlying diseases, such as, e.g., cholinesterase inhibitors for neuropsychiatric symptoms in Alzheimer's disease [189]. In targeting high levels of impulsiveness specifically, antiepileptics, lithium and selective serotonin reuptake inhibitors have all been used [190]. However, only antiepileptics have been subject to rigorous systematic review methodology: A Cochrane review [166] concluded that only four antiepileptics (valproate/divalproex, carbamazepine, oxcarbazepine and phenytoin) were effective, compared to placebo, in reducing acts of impulsive aggression. For the management of agitation and/or aggression in patients with acquired brain injury though, another Cochrane review found some evidence for the effectiveness of propranolol but not for carbamazepine or valproate [191]. For Alzheimer's disease, olanzapine and risperidone have been found to be effective in the reduction in aggression though they have also attracted most side effects according to a Cochrane systematic review [192].

The body of evidence is insufficient to allow any definite conclusion to be drawn about pharmacological interventions in the case of patients presenting with aggression and PD. There is sparse evidence to support the use of anticonvulsants to reduce aggression in PD patients, as well as the intensity of subjective states of anger, the readiness to react to anger

(trait–anger) and the tendency to direct anger outwards, and to increase in the ability to control anger [193]. A Cochrane review on pharmacological interventions in ASPD [194] found some evidence for the use of nortryptiline and bromocriptine and reported on one trial which found phenytoin to be effective in reducing impulsive aggression in male prisoners. Some evidence supports the use of the antipsychotics quetiapine [195, 196], aripiprazole [197], paliperidone [198] and the anticonvulsants divalproex extended-release [199], topiramate [200] and lamotrigine [201] in the preventing the aggression among subjects with borderline personality disorder.

Clozapine warrants attention here as there is some evidence that it might have anti-aggressive properties. It has been found to be effective in reducing violence in patients with SSD, particularly in treatment-resistant conditions. Reduction of the clinical severity of ASPD has been demonstrated in detained patients with ASPD treated with clozapine [202]. A case series in patients with borderline PD also reported the reduction in aggression [203] and clozapine has also been associated with reduced re-offending compared to other antipsychotics [204]. However, a systematic review on the subject [205], concluded that in view of a small number of studies it remains unclear as to whether clozapine is more effective than other antipsychotics in reducing aggression.

3.5.2.3 Pharmacological treatment of sex offenders

A Cochrane Review of pharmacological interventions for sex offenders identified only seven trials, published over 20 years ago, therefore not including newer drugs currently in use [206]. The authors concluded that their review did not provide sufficient evidence for reducing sexual recidivism using pharmacological interventions. Despite this such interventions are frequently used and the guidelines published by the World Federation of Societies of Biological Psychiatry [207] recommend an algorithm including selective serotonin reuptake inhibitors and antiandrogens, depending on the level of risk.

4. CONCLUSIONS

Forensic-psychiatric institutions are high-cost, low volume services which pose significant restrictions on individuals. It is therefore imperative that the practice of forensic psychiatry follows the highest standards, based on the most recent scientific evidence. In this review we

summarised the evidence and available guidance regarding expert witnessing, risk assessment, treatment settings and interventions for MDOs. Overall, the evidence base for forensic psychiatry is weak and future high quality trials are urgently needed in this complex and doubly stigmatised patient group. Nevertheless, some conclusions can be drawn for the practice of forensic psychiatry in Europe:

- Forensic-psychiatric care produces better outcomes than incarceration in prison alone and should therefore be the preferred modality for interventions.
- Service organisation varies widely across Europe, including where services are delivered (prisons, general or forensic-psychiatric hospitals), how they are organised (e.g. levels of security), who decides on access to and discharge from services (governmental bodies, judiciary, medical) and admission criteria (e.g. exclusion of certain types of individuals). There is insufficient evidence to suggest one model of care over another at this point, but generally care models which minimise length of stay and restrictions and allow smooth transitions are to be preferred. In terms of oversight, it seems important that professionals working in forensic-psychiatric settings are able to make decisions in the best interest of patients and not be unduly influenced by political considerations.
- Forensic psychiatrists who give evidence in court need to be aware of their role as *independent* expert. They fulfil this role to assist the legal process and not as treating physicians. Nevertheless, they are governed by their professional bodies and medical ethics.
- Risk assessment is an important part of forensic psychiatry. Structured tools should be used for this task. Those based on structured professional judgement (SPJ) are to be preferred as they allow the identification of treatment targets and plans for the management of risk rather than its pure description and prediction of future events. Due to their, at best, moderate performance in risk prediction, practitioners should be aware of the limitation of the tools available and not use them as sole determinant of decision making. Protective factors should be taken into account.
- MDOs should be directed towards and diverted into psychiatric care early in the judicial process wherever possible.
- Community treatment orders as an approach to managing MDOs in the community cannot currently be recommended on the basis of available evidence.
- MDOs have a range of complex needs and evidence is often limited as to which interventions might be effective, in particular where comorbidities, such as substance use disorders, exist. In designing interventions for MDOs practitioners need to draw from the literature regarding non-offending psychiatric patients as well as that from offending populations.

- The RNR and GLM are useful frameworks informing care delivery and intervention programmes with some evidence that programmes adhering to the former produce better results.
- General elements of the therapeutic milieu include the therapeutic use of security, multidisciplinary working, patient involvement, meaningful activities and quality of life.
- Interventions designed to enhance motivation and engagement are of particular importance for MDOs.
- CBT based approaches, group and individual, focusing on problem-solving and interpersonal skills, have the best evidence base for the treatment of MDOs and should be preferred over other models.
- The evidence base for interventions of sex offenders is weak and on the basis of this evidence no psychosocial interventions can currently be recommended for this group. Research is urgently needed to identify effective psychological and psychosocial interventions for these offenders.
- There is some (weak) evidence for the effectiveness of antipsychotic agents (in particular clozapine) in reducing aggression and for the use of mood stabilisers/antiepileptics and antipsychotics in impulsivity.
- The pharmacological treatment for sex offenders includes SSRIs and antiandrogens though the evidence base is weak.
- For MDOs in prisons the principle of equivalence should be applied.
- Suicide prevention is crucial in any setting where MDOs are detained and treated.

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Table 1: Search strategies

Search Strategy (all searches run on 24/08/17)	
Ovid	1 exp forensic psychiatry/ (38376)
MEDLINE	2 forensic.ti,ab. (31050)
	3 ("mentally ill offender\$" or (mental adj5 offend\$)).ti,ab. (606)
	4 or/1-3 (66004)
	5 exp guideline/ or exp practice guideline/ (30576)
	6 (guideline\$ or "best practice\$").ti,ab. (245610)
	7 exp Clinical Trial/ (822344)
	8 exp randomized controlled trials/ (118140)
	9 exp double-blind method/ (150869)
	10 exp single-blind method/ (25363)
	11 exp cross-over studies/ (43146)
	12 randomized controlled trial.pt. (475282)
	13 clinical trial.pt. (529253)
	14 controlled clinical trial.pt. (96050)
	15 (clinic\$ adj2 trial).mp. (671553)

	16	(random\$ adj5 control\$ adj5 trial\$).mp. (624463)
	17	(crossover or cross-over).mp. (77353)
	18	((singl\$ or double\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).mp. (208286)
	19	randomi\$.mp. (719887)
	20	(random\$ adj5 (assign\$ or allocat\$ or assort\$ or reciev\$)).mp. (202810)
	21	Meta-Analysis as Topic/ (16309)
	22	Meta-Analysis/ (84529)
	23	exp Review Literature as Topic/ (9683)
	24	((comprehensive\$ or integrative or systematic\$) adj3 (bibliographic\$ or review\$ or literature)).mp. (113011)
	25	(meta-analy\$ or metaanaly\$ or "research synthesis" or "literature review").mp. (179688)
	26	or/5-25 (1606546)
	27	4 and 26 (3341)
	28	limit 27 to (humans and yr="2000 -Current") (2271)
PsycINFO	1	exp forensic psychiatry/ (4209)
	2	forensic.ti,ab. (15482)
	3	exp MENTALLY ILL OFFENDERS/ (3458)
	4	("mentally ill offender\$" or (mental adj5 offend\$)).ti,ab. (1424)
	5	or/1-4 (19081)
	6	exp Treatment Guidelines/ (5812)
	7	exp Best Practices/ (4085)
	8	(guideline\$ or "best practice\$").ti,ab. (62114)
	9	randomi\$.mp. (69343)
	10	((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).mp. (23429)
	11	placebo\$.mp. (36846)
	12	crossover.mp. (6514)
	13	exp treatment effectiveness evaluation/ (21850)
	14	exp mental health program evaluation/ (1996)
	15	(random\$ adj (assign\$ or allocate\$)).mp. (35339)
	16	exp "literature review"/ (22332)
	17	((comprehensive\$ or integrative or systematic\$) adj3 (bibliographic\$ or review\$ or literature)).mp. (31739)
	18	(meta-analy\$ or metaanaly\$ or "research synthesis" or "literature review").mp. (68037)
	19	or/6-18 (277455)
	20	5 and 19 (1735)
	21	limit 20 to (human and yr="2000 -Current") (1377)
Embase	1	exp forensic psychiatry/ (12753)

- 2 forensic.ti,ab. (47050)
- 3 ("mentally ill offender\$" or (mental adj5 offend\$)).ti,ab. (835)
- 4 or/1-3 (55396)
- 5 exp practice guideline/ (422685)
- 6 (guideline\$ or "best practice\$").ti,ab. (425150)
- 7 exp randomized-controlled-trial/ (467945)
- 8 exp randomization/ (75276)
- 9 exp single-blind-procedure/ (29106)
- 10 exp double-blind-procedure/ (142128)
- 11 exp crossover-procedure/ (53000)
- 12 (clin\$ adj2 trial).mp. (1381324)
- 13 ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).mp. (262261)
- 14 (random\$ adj5 (assign\$ or allocat\$)).mp. (156308)
- 15 randomi\$.mp. (987540)
- 16 crossover.mp. (84299)
- 17 exp Meta Analysis/ (132249)
- 18 ((comprehensive\$ or integrative or systematic\$) adj3 (bibliographic\$ or review\$ or literature)).mp. (237954)
- 19 (meta-analy\$ or metaanaly\$ or "research synthesis" or "literature review").mp. (297871)
- 20 or/5-19 (2755269)
- 21 4 and 20 (3052)
- 22 limit 21 to (human and yr="2000-Current") (2265)

Cochrane

- 1 MeSH descriptor: [Forensic Psychiatry] explode all trees (209)
 - 2 forensic.ti,ab,kw (366)
 - 3 ("mentally ill offenders" or (mental near/5 offend*)):ti,ab,kw (43)
 - 4 #1 or #2 or #3 (550)
 - 5 MeSH descriptor: [Guideline] explode all trees (26)
 - 6 MeSH descriptor: [Practice Guideline] explode all trees (16)
 - 7 (guideline* or "best practice*"):ti,ab,kw (20551)
 - 8 #5 or #6 or #7 (20551)
 - 9 #4 and #8 (14)
- Limited to Publication Year from 2000 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews and Trials (9)
-