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Forensic Mental Health – envisioning a more empirical future

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Summary

Forensic mental health services provide crucial interventions for society. They provide care for patients with mental disorders who commit violent and other serious crime and play a key role in protection of the public. To achieve these goals, these services are necessarily expensive, but have been criticised for a high cost, low volume approach, as well as for lacking consistent standards of care and, despite progress towards more humane approaches, for neglecting human rights and other ethical considerations. A major concern is lack of sufficient evidence base to justify common practices such as restricting leave from hospital and detaining patients for long periods. There is also a lack of quality evidence for key interventions, including psychological therapies, pharmacotherapy, and restrictive practices. The causes for this are complex, but include insufficient investment in research infrastructure, especially for clinical academics, and fragmentation and isolationism of services, nationally and internationally. In this paper, we highlight some of the major gaps in the forensic mental health evidence base, the challenges in addressing these, and suggest a series of solutions with implications at a clinical, humanitarian, and public health policy level.

Introduction

Forensic mental health services are crucial elements of healthcare and criminal justice systems. These services provide care for patients with mental disorders who have also committed crimes, often violent crimes, or who have not offended but are deemed at high risk of doing so. Many patients will have severe mental health problems and multiple psychiatric and physical comorbidities. Alongside the core mission of achieving better outcomes across clinical, social, and functional domains for this complex and marginalised group, forensic services fulfil another key societal role – protection of the public, primarily against violent crime that occurs in the context of mental disorder.

In addressing these goals, forensic services are costly. In the UK, they consume up to a fifth of the overall mental health budget, while serving a small share of the patient population (there are approximately 8,000 patients under forensic care in the UK).[1] Internationally, the number of psychiatric beds allocated to forensic services has risen steadily in recent decades. For instance, the average increase in forensic beds in Western European countries was 0.49 per 100,000 inhabitants in the period 1990 and 2000 and by 0.76 between 2000 and 2012.[2] Forensic services have thus come under criticism for this high cost, low volume approach, given the ever-increasing demands on resources across wider mental health services both in the UK and internationally. These services must strike a balance between a patient's rights to autonomy, dignity, and equality of care and the public's right to safety, which is not always achieved.[3,4] However, forensic services have been further criticised for lacking consistency in standards and in models of care,[5] detaining an undue proportion of long-stay patients,[6] and giving insufficient consideration to ethical and human rights frameworks in service delivery.[7]

Given these important concerns, there is an onus on forensic mental health services to provide high quality scientific evidence to justify their level of funding and their effects on patient lives and liberty. Although there has been progress in developing humane, patient-centred approaches to forensic mental healthcare in recent decades and findings that these services are associated with reduced offending,[8] this high quality evidence is often lacking. High profile failures of controversial treatment programmes in the UK such as 'Dangerous and Severe Personality Disorder' (DSPD) for antisocial personality disorder and psychopathy[9,10] and the Sex Offender Treatment Programme (SOTP)[11] illustrate the consequences of policy implementation built on an insufficient evidence base. Relatedly, high-profile incidents in other settings, related to inadequate risk assessment and management – a core tenet of forensic practice – can contribute to catastrophic outcomes and damage to public trust.[12,13]

Yet forensic services in higher income countries continue to rely on underpowered and suboptimally designed studies, which have not kept pace with initiatives to address reproducibility and precision increasingly adopted in wider mental health research. In other countries, particularly in low and middle income settings, there is often little or no forensic mental health research at all, in part because most do not have dedicated forensic services, but also due to due to a lack of an academic culture in forensic psychiatry in those that do. Underlying this problem, a lack of investment in forensic mental health research by clinical, academic, and funding institutions has led to a shortfall in researchers sufficiently trained to tackle these large-scale challenges, and a lack of infrastructure within which to do so. Forensic services can also be understood to include provision of mental healthcare to prisoners, an area which has been almost entirely neglected by research, apart from some large scale epidemiological work.[14,15]

In this paper, we identify three key areas for development in forensic mental health research. We outline some of the major deficits in the existing knowledge base, and the challenges in addressing these. We put forward a series of proposals to fill these gaps, with a focus on solutions achievable in the UK, but also those which may be adopted internationally. We conclude that lack of investment in establishing the scientific basis of forensic mental health is a short-sighted and cost-ineffective position that must be addressed to justify necessarily expensive and far-reaching interventions which have implications at a clinical, humanitarian, and public health level.

1. Improving the evidence base for key interventions

Psychotherapies

Psychological interventions are a core component of forensic services. However, quality evidence to support their use is sparse. For instance, a wide-ranging international systematic review of psychotherapies and psychosocial interventions in forensic settings found that only seven out of ninety-one comparisons revealed statistically significant results, with no consistent significant findings.[16] A further recent review and meta-analysis concluded that there were few outcomes for which psychological therapy was associated with improvements beyond that of comparison treatment, and that these improvements were generally small.[17] Another concern is the lack of monitoring for unwanted events in studies of psychotherapies. These include emergence of new symptoms, symptom relapse, overall clinical deterioration, or strains in family or work relations.[18] Despite evidence that these occur in between 5 and 20% of psychotherapy patients,[18] estimates

suggest that only one-fifth of all psychotherapy trials have included some form of monitoring for harms,[19] and that this may be as low as 5% in forensic settings.[20]

The optimal approach to improving the quality of evidence is to conduct Randomised Controlled Trials (RCTs) in forensic settings, including prisons. This poses considerable practical difficulties, for example due to relatively small numbers of patients on forensic wards, security issues in prisons, and particular ethical concerns, not least due to the risk of violence from patients involved in trials. Psychotherapy studies in forensic settings also face greater challenges than in other settings, due to the necessarily coercive nature of the environment. This may contribute to a lack of motivation to adhere to therapy, lead to people dropping out of clinical trials, or not initiate treatment, creating a bias towards patients who are motivated.

Instances of well conducted RCTs in forensic settings[21-23] illustrate that these can be achieved. At the same time, other trials have been seriously undermined by practical problems. For instance, one trial of psychological intervention was compromised by drastic cuts in prison staffing during the study,[24] while in another, outcome ascertainment was only possible in two-thirds and in less than half the prisoners receiving the planned intervention after randomization.[25] Designs likely need to be flexible and adaptive, and developed alongside other rigorous methods for evaluating the impact of interventions e.g., non-randomised studies, including pre-post implementation studies.[26] Although RCTs are costly, these costs are far outweighed by the wide-spread application of novel interventions with no superiority over treatment as usual. The issue of bias towards inclusion of patients who agree to psychotherapy and RCTs should be incorporated into future trial design and analytical plans. To assess negative outcomes of psychotherapy, many recommendations for future research have arisen from previous reviews, including comprehensive reporting of all adverse outcomes, but also rates of clinical deterioration, use of reliable and valid scales, and multilevel modelling in large samples to understand the interaction between factors.[20,27]

Pharmacotherapy

Pharmacotherapy is an almost universal component of treatment in forensic settings. The mainstay of prescribing is antipsychotic medication, either as the most effective treatment for a primary psychotic illness, or as off-licence use for symptom management (e.g. for those with personality disorders). Polypharmacy and high dose antipsychotic prescribing, including in non-psychotic illness, is a long-standing and international phenomenon in forensic settings, particularly those of high security.[28] Such prescribing increases the considerable risks of common significant

short- and long-term adverse effects of standard antipsychotic prescribing, including obesity and Type II Diabetes. The importance of incorporation of such risks into personalised treatment decisions is increasingly appreciated in psychiatry. This is especially important in forensic settings, where poor physical health[29] and associated morbidity[30] are high, a sedentary environment is common, and patients often remain on medications for long periods as inpatients and in the community. The regular monitoring of these medications, their doses, and adverse effects is part of good clinical practice and how this can be most effectively done is an important topic for research.

To date, however, a quality evidence base to support much of current practice is lacking. There are particular challenges in achieving this in forensic settings. Patients in these settings usually have severe mental disorders, for example treatment-resistant psychosis, and multiple comorbidities, including personality disorder and substance misuse.[31] For this reason, such patients are often excluded from clinical trials, meaning that information about both adverse effects and treatment effectiveness may be extrapolated from data in populations that are unrepresentative of forensic clinical populations. One especially prevalent condition in forensic settings is antisocial personality disorder (ASPD), present in up to 60% of forensic inpatients[32] and in 50% of prisoners,[15] who typically receive mental health input from prison healthcare services. These patients are often treated with psychotropic medication for the core symptoms of the condition, often at high doses.[33,34] This is despite the fact that no specific pharmacological strategy for ASPD is supported by a large-scale Cochrane review of the RCT evidence.[35] Comorbid Cluster B personality disorders/traits are also the target of pharmacological strategies but again this is not supported by strong evidence or treatment guidelines.

As is the case for psychotherapies, RCTs of pharmacological treatments are especially challenging in forensic settings, though a recent trial across two UK prisons showed these can be achieved.[36] An alternative to RCTs of pharmacotherapies are pharmaco-epidemiological studies, which allow evaluation of population-wide effects of medications. Recent evidence from such studies suggests potential benefits in violence reduction for some of the medications typically prescribed in these settings, including antipsychotics, across broad populations.[37,38] They also suggest, importantly for forensic populations, that common polypharmacy approaches such as combining antipsychotics and mood stabilizers do not improve outcomes,[39] but other combination treatments such as antipsychotics and anti-craving medications may have a role in people with dual diagnosis.[37] Such findings require validation across multiple samples and triangulation with other methods.[40] Furthermore, these studies highlight the importance of considering specific and predefined outcome measures. While antipsychotics may be prescribed primarily with the intention to relieve symptoms, there is often the added intention, explicitly stated or otherwise, to reduce risk

of violence (which may be mediated by symptom relief but also by addressing comorbidities). However, this more forensic-specific dual outcome is not supported by evidence.

In sum, the high volume of psychotropic prescribing in forensic services needs to be continuously informed by new evidence to better treat underlying conditions and mitigate adverse effects. Rigorous appraisal of adverse outcomes and value of polypharmacy over monotherapy should be an essential component of future studies. Due to the high rates of treatment-resistant psychosis in forensic settings, a focus on approaches to treatment resistance may be a particularly fruitful avenue of research.

Risk assessment and management

Another key aspect of forensic mental health practice is assessing and managing individual patient risk of future violence. This process is integral to admission, discharge, and stepwise progress through secure hospital pathways, and guides decisions about the progressive easing of restrictions. Inaccurate risk assessment and management processes that result in the discharge of a patient who subsequently reoffends will both disrupt the clinical care of the patient and undermine public safety. Conversely, patients can be wrongly assessed as requiring longer periods under highly restricted conditions. Violence risk assessment guides the allocation of substantial resources and directly engages the core challenge of balancing individual need and public protection.

How best to assess and manage violence risk in practice remains contentious. A vast number of instruments to support risk assessment have been developed and implemented internationally,[41] such as the widely used (and in some services, mandated) Historical Clinical Risk Management-20 (HCR-20).[42] Structured professional judgement (SPJ) tools such as HCR-20, however, typically take many person hours to complete,[43] potentially diverting resources away from other clinical interventions. There are additional resource implications for staff training and direct costs (e.g. manuals and materials). The standard of evidence to support use of SPJs therefore should be high. While predictive validity of these tools has been widely investigated, the quality of such study designs has been challenged.[44] There also remain unanswered questions, such as diagnosis-specific performance (e.g. in schizophrenia[45] and psychopathy[46]), and the predictive validity of individual factors.[47] The best application of SPJ tools is likely in guiding individualised management plans, rather than prediction of future risk, yet many practitioners draw on these tools in making assertions about risk. A key future direction is to move beyond predictive validity and examine the extent to which risk assessments inform management strategies, and how effectively these strategies reduce risk.[48]

Future research specific to risk prediction should embed contemporary methodological standards for risk prediction research,[49] such as adequate sample sizes and reporting of a full range of performance metrics. For instance, use of multisite or nationwide registry data could bolster sample sizes, as has been utilised in large scale forensic work based on Swedish registries.[37,50] The importance of a granular understanding of base rates of offending behaviour, particularly violence, including local base rates in specific populations (e.g. patients with schizophrenia), and the risks of estimating risk without this information, have been well documented.[51,52]

Whether prediction can be improved in a feasible manner with incorporation of dynamic factors or other novel measures (such as from neuroimaging[53]) is another potential avenue for future work. To consider what constitutes clinically acceptable predictive performance for a given tool, research also needs to be anchored in the clinical decisions that may be guided by the outputs of the tools. Further, as predictive performance will probably be influenced by active treatment and risk management, strategies used should be reported in studies that examine the accuracy of such tools.[44,54]

Restrictive interventions

Despite regular calls to reduce or cease their use, seclusion (the involuntary confinement of a patient alone in a room or area from which the patient is physically prevented from leaving), manual restraint (i.e. 'holds'), and mechanical restraint (the use of belts, handcuffs and similar, which restrict the patient's movements or totally prevent the patient from moving) remain commonly used methods to mitigate against violence in forensic psychiatric settings internationally.[55] These interventions raise reasonable questions about the balance between safety – of both patients and healthcare staff – and coercion and control. Yet evidence to support their use is absent. A 2012 Cochrane review revealed that no controlled studies exist that evaluate the value of seclusion or restraint in those with serious mental illness, while there were reports of serious adverse effects for these techniques in qualitative reviews.[56] RCTs of these interventions are especially difficult, if not impossible, not least because they are typically employed during sudden and unplanned incidents, rather than being part of routine care. There is a critical need for pragmatic approaches to investigating the effectiveness of these measures, as well as the utility of initiatives to reduce their use, for instance, seclusion reduction programmes, which are supported by some small-scale studies.[57]

Assessment of risk for testing community and other types of leave from forensic settings is another area of forensic practice lacking a sound scientific basis. Despite some initiatives to

standardise practice,[58,59] such risk-based decisions are often highly subjective, with evidence suggesting wide variation in individual appraisal of risk.[60] This also has implications for decisions around hospital discharge. Very long periods of detention have been identified as a cause of concern in forensic settings,[6] however the characteristics of forensic psychiatric patients who experience long durations of stay are not well understood, despite their ethical and resource implications. More standardised reporting of risk may allow improved comparison. Relatedly, another restrictive intervention has recently emerged as a risk management strategy in UK forensic psychiatric settings: electronic monitoring (EM, or 'tracking') of individuals using Global Positioning System (GPS) technology. Some initial evidence suggests it may increase patient access to leave[61] and to be cost neutral for services,[62] however concerns remain about the impact on patient's basic rights (for instance to liberty and autonomy[63]), potential stigma, and unwarranted coercive practices. Patients subject to EM in UK forensic settings typically give their consent for this, however the degree to which consent can be genuinely assessed in such instances remains a matter of debate.

The discrepancy between widely adopted restrictive practices and their empirical underpinnings should be a priority for forensic services. Well-designed studies to compare outcomes of restrictive interventions are required, as are studies of interventions designed to reduce their use. As with RCTs for pharmacological and psychological interventions, practical issues such as the difficulty of blinding and randomisation may be countered by pragmatic, naturalistic, and observational projects which can be carefully designed to control for as much confounding as is possible.

2. Developing contemporary research approaches

Forensic Neuroscience

Understanding the neural basis of mental disorders has been identified as an important step towards improving treatments and patient outcomes in mental health.[64] Insights from neuroscience have implications for particular subsets within forensic populations, who may be relatively resistant to the impact of psychosocial interventions, such as youths with callous-unemotional traits and adults who meet criteria for antisocial personality disorder (ASPD) with psychopathy.

Recent developments in large-scale genetic research[65,66] and imaging technologies[67,68] have led to renewed optimism and ongoing investment in neurobiological research. Investment in neuroscience in forensic populations, however, has lagged behind. This is due in part to difficulties in recruiting from this population for studies, which often involve a considerable level of engagement

in protocols and use of technologies with which patients may be unfamiliar. There is, however, also internal resistance from forensic services, which may have a philosophical component. For instance, a therapeutic nihilism may exist, particularly about ASPD and psychopathy.[69] This can contribute to tendencies to ignore or inaccurately reattribute issues that emerge from the condition, particularly violent offending, to other conditions, such as PTSD and ADHD.

These issues may be overcome in several ways. Institutional initiatives to ensure adequately powered studies are manifold, but mostly involve large-scale collaborative projects. In recent years, several such projects have emerged in youth populations. These include FemNAT-CD,[70] ABCD,[71] Agressotype and MATRICS. In adults, the large-scale ENIGMA consortium[72] has developed an antisocial behaviour working group. To engage the forensic population in neuroscience research, Patient and Public Involvement work may have a key role. For instance, psychoeducation and patient engagement initiatives may engage individuals hesitant to participate in research due to uncertainties about what outcomes may mean. One such recent initiative[73] demonstrated that many men with ASPD are interested in uncovering potential precipitants of their behavioural patterns, but have practical concerns about involvement in research, such as anxiety about the procedures in research settings, which can be easily addressed.

'Big Data' approaches

One of the most important recent developments in healthcare research has been the growing development of data science, whereby new knowledge is generated from analysis of large volumes of real-world data such as electronic patient healthcare records (EHRs/EPRs), using computing science and statistics. In Sweden, as in other Nordic countries, linkage of healthcare, prison and other socio-demographic databases has been in place for many years, leading to the prominence of Scandinavian data in underpinning mental health research, including in forensic settings.[74] In Australia, record linkage of such data for research, using probabilistic linkage techniques (in the absence of the unique identifiers that are available almost exclusively in Nordic countries), has been progressing across most states and territories over the past decade. From a forensic mental health research perspective, this has enabled record-linkage databases of forensic patient and prison cohorts with longitudinal information about criminal justice and health system contact to be established and exploited in order to examine patient profiles, outcomes and pathways through systems over time.[75] In New South Wales, the state government established the Centre for Record Linkage (CHeReL), which links data, independent of researchers and data custodians, so that neither group have access to identifying information for the linked dataset at any

point. This approach has been immensely successful producing over 600 publications in peer-reviewed literature[76] and there have been no reports of re-identification occurring.

More ambitious still has been the creation of the Swedish National Forensic Psychiatric Register,[77] a nationwide forensic psychiatric patient register containing data on sociodemographics, psychiatric health, substance abuse, criminal behaviours and pharmaceutical treatment. Similar initiatives are now operational in Australia[75] and Canada.[78] In 2013, the Scottish national Forensic Network developed a Service Census database, administered by the State Hospital, allowing for a comprehensive collection of national forensic data. There is a strong case for the establishment of a UK-wide forensic psychiatric patient register, combining linked data from prisons, the probation service, and High Security Hospitals. This could build on existing data mining and Natural Language Processing (NLP) initiatives within UK psychiatry, such as the Clinical Record Interactive Search (CRIS). A national register of this kind would also allow comparison and replication with existing studies utilising other international data. A recent data partnership, Administrative Data Research UK (ADR UK), is creating linked research datasets from administrative sources, making these available to researchers through a network of trusted research environments, while ensuring data security. Its inclusion of national criminal justice information will be key for its utility.

Considering equity and patient perspectives

Disproportionate rates of detention and unequal outcomes in minority ethnic groups has been increasingly recognised in mental health services, including in forensic mental health. For instance, people from all ethnic minority groups are more likely to be detained involuntarily than White people in White majority countries,[79] while Black people in particular are significantly over-represented in locked wards, psychiatric intensive care and secure hospitals.[80] When Black people are admitted to hospital, they are more likely to experience restrictive practices, such as high dose antipsychotic medication, physical restraint, and seclusion.[80]

The causal basis of these discrepancies is uncertain, but is thought to be associated with increased prevalence of schizophrenia in some minority populations, more frequent adverse experiences of mental health services, systemic problems with services, and differential use of psychiatric services.[79] While this complex area has received considerable attention at a governmental and organisational level, it requires more research to clarify and disentangle all the potential factors involved. Future work requires a rigorous approach, disaggregating data between minority ethnic groups and using culturally-specific, hypothesis-driven studies to examine the multitude of potential contributory factors.[79] Another concern is under-representation in research studies of two rapidly

growing populations within forensic services: women and older people. Studies in these groups should be funded to ensure equitable research practice.

Increased patient collaboration in risk assessment and management planning also warrants consideration. In England and Wales, this has been identified as a key target, for example in Department of Health best practice guidance, [81] and by priority-setting work with key stakeholders.[82] Shared decision making has the potential to inject a person-centred, rights-based, and recovery-oriented approach to forensic psychiatric care, however patients in forensic services may encounter multiple challenges to involvement in healthcare decision-making.[83] Evidence for patient collaboration in risk assessment in forensic settings, however, is relatively scarce, and the impact of previous initiatives to increase patient involvement in research is currently unknown.[84] Hence, future work will need to meaningfully embed patient involvement and co-design in care planning, while assessing its impact. It will also need to consider how this can be instigated at different points in the secure pathway, for instance at major decision junctures such as admission and discharge, as well as more routine and daily decisions such as access to leave. Patient involvement in outcome measurement is also an important future direction. Recent initiatives to develop patient-reported outcome measures (such as FORUM) may provide alternatives to pragmatic, downstream measures such as reoffending, which will not capture the full impact or quality of services and interventions.

3. Developing the forensic clinical-academic workforce

Clinical-academic pathway development

One of the key strategies for encouraging high quality research in medicine is to support clinicians from all health disciplines to combine their clinical work with academic research. The vulnerability of academic psychiatry has been of increasing concern,[85] with a sustained decline in clinical academic staffing in psychiatry from 2007 onwards, and 2022 estimates of numbers of clinical academic staff around a third lower (using full-time equivalent information) than in 2004.[86] In the UK, a strategy for modernising the approach to clinical-academic training and careers has been set out by Health Education England's Clinical Academic Careers Framework,[87] with the goal of training future leaders of medical research communities. However, the impact of this initiative is as yet unclear, with more evidence found for benefits for recruitment than for retention.[88]

The clinical academic pipeline is a significant concern across psychiatry. This is especially the case in forensic psychiatry, where very few clinicians will have been exposed to prison or forensic psychiatric settings when they begin to develop their academic interests. A clinical interest in

forensic mental health may therefore simply arrive too late for many early career researchers to successfully pivot their research focus. A perpetuating factor is that the small numbers of clinical academics in forensic settings limits the access of junior clinicians to senior mentors, which has been shown to be an important factor in clinical academic career development.[89] Addressing the clinical-academic shortfall in forensic settings requires collaboration between higher education institutions, clinical services, research funders and specialty training bodies. At the medical undergraduate level, locally developed mentoring schemes offer one route to exposing interested students to forensic clinicians and environments, alongside national programmes, such as through the UK's Royal College of Psychiatrists. Support for early career researchers to develop competitive funding proposals and robust forensic educational programmes at postgraduate level are other key points of focus.

Relative deficits in numbers of non-medical mental health professionals, compared to the rest of medicine, are also widely acknowledged. Despite the available career development pathways, the onus typically remains with individual employing organisations to develop local implementation strategies. Cultivating research-active clinicians in forensic settings requires investment, culturally and practically, by healthcare services, care systems and regulators. This is not a passive process. It requires demonstration of the tangible impact of this on services and patient outcomes, and therefore the direct benefit of such organisational investment. The importance of research within the NHS, as elsewhere, was highlighted by the global impact of COVID-19 vaccine research, which led to a joint position statement from the National Institute for Health and Care Research (NIHR) and Royal College of Physicians for "Making research everyone's business". This statement makes recommendations, including encouraging research to be recognised as part of direct clinical activity, ring-fencing time for research in job plans for those seeking a research leadership role, and ensuring that multidisciplinary workforce planning includes those who support research. Forensic mental health service organisations would do well to position themselves within this evolving wider ethos.

Building collaborative Networks

Separation is embedded within the clinical structure of forensic mental health services. The segmented nature of the clinical landscape in forensic psychiatry also breeds sub-specialisation of research activity, where researchers naturally focus on narrow areas of clinical interest that might lack transferability or system-wide, cross-disciplinary relevance. This limits the potential for the large-scale multi-centre studies, nationally and internationally, that are required to improve the standing of forensic mental health research and lead to wider dissemination in published literature and greater impact. An overarching strategy for identifying the key evidence gaps in forensic mental

health is currently lacking. Developing collaborative projects and broad strategies for priority setting requires both development of coherent local networks, alongside a systematic approach to pooling resources at national and international levels.

In the UK, there are examples of both established and developing networks of researchers (see Figure 1). However, no formal UK-wide network of forensic mental health academics exists. There is increasing emphasis on building networks and clinical-academic capacity in overlooked areas, such as the NIHR's Incubator funding initiative. Meaningfully progressing this agenda in forensic mental health will require this type of formal support, alongside that of other national bodies such as the Royal College of Psychiatrists' Forensic Faculty. Such networks would have a variety of benefits. This includes ensuring researchers from different disciplinary backgrounds are integrated within these networks and work together on important research questions. While there is a place for discipline-specific clinical questions, for example, on psychotherapeutic or nursing interventions, isolationism within professional groups restricts the development of synergistic cross-disciplinary pooling of skills and is one barrier to effective large-scale research.

International collaboration may be especially helpful in establishing a basis for research and evidence-based practice in settings where forensic psychiatry is newly developing, or does not exist at all, as a sub-specialty. Among the important considerations for Low and Middle Income Countries (LMICs) is how they can ensure that length of stay does not inexorably rise (as in some High Income Countries), which may include revising mental health legislation to provide appropriate legal oversight and safeguards and introducing evidence-based practices that are scalable. In this context, external validations of risk tools and treatments need to be prioritised in LMICs. We identified one such validation of a risk assessment – external validation of the OxRec tool in Tajikstan in a prospective design.[90] A particular challenge is the lack of trained psychiatrists, psychologists and other professionals with forensic experience, some of whom move to HICs or to private practice within their countries. This requires consideration of staff-based incentives. The wider involvement of community health workers – which has been advocated for common mental disorders – is less straightforward in forensic services but could have a role in community follow-up.

4. Developing Forensic Mental Health Education

Alongside research, a rigorous evidence-based approach to developing forensic mental health services and practice must also include a key role for education and training. Evidence-informed and skilled educators can help translate key research findings, improve health services, and ultimately

enhance outcomes and experiences for patients, including in forensic mental health. Just as models of clinician career development combining clinical and research work have been established in many jurisdictions (e.g. NIHR clinician researcher models in the UK), supporting career pathways designed to produce new clinician educators is required, as well as those attempting to combine clinical work, research and teaching (on so-called 'balanced' academic contracts[91]).

In addition to potential benefits for the quality of healthcare provision and patient outcomes, an increased focus on education and training should support the career development of forensic mental health clinician educators on recruitment into the specialty. Exposing students, including medical students, to forensic mental health practice, taught to them by motivated and highly skilled clinician educators from early stages of their healthcare professional journey, will likely inspire the next generation of forensic mental health clinicians.[92] As is the case across the spectrum of medical education, education and training in forensic mental health now spans undergraduate, postgraduate and continuing professional development or 'lifelong learning' contexts. Different skills are needed by the professional educator to meet the needs of students at these different stages, and inter-professional learning is quickly becoming the norm in all contexts, requiring a multidisciplinary approach to education just as is seen in clinical practice and in research. Academic work with an educational focus is also increasingly expected of medical educators, requiring a rigorous research approach to be taken to the business of education and training in the same way that is done for clinical practice.

Conclusions

Forensic mental health services are complex, expensive, and uniquely restrictive, while serving a vital societal purpose. They provide care to people with severe mental health needs who are at risk of a range of serious adverse outcomes. Providing services that are evidence-based, effective, patient-centred, and resource-efficient, whilst navigating the ethical and societal frameworks involved, requires a coordinated strategy for high quality clinical research to be conducted in these settings. Essential components of this include prioritisation and targeting of the most clinically important questions, increasing the capacity of the research workforce, and improving research quality by pooling expertise, resources, and data sources. To develop and implement a successful strategy requires recognition of the current shortfall, and long-term investment by healthcare organisations, clinical professional bodies, and research funders.

Contributions

JT, JH, and DW conceptualised the paper. JT, JH, DW, and KD wrote initial drafts. JT and DW made revisions on subsequent drafts, addressing critical review comments contributed by JH, KD and SF.

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Conflict of Interest

The authors declared no conflicts of interest.

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