

# PRISMA ScR Guided Scoping Review of Forensic Models of Care in Intellectual Disability

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#### Abstract

*Background: Intellectually disabled persons are over-represented in forensic and criminal justice systems, but there is a lack of consistency in assessing and addressing forensic models of care. The dependence on institutional services that appear to be safe and the lack of neurodevelopment-specific adjustments of the risk assessment frameworks is a cause of concern about the equity and effectiveness of the services provided. Purpose: This PRISMA-ScR scoping review identified structural typologies, risk management strategies, and evaluative gaps of forensic models of care provided to individuals with intellectual disability by mapping and synthesizing existing forensic models of care. Procedure: A total of 1,285 records were found by electronically searching PubMed, Scopus, and Embase (20002025). Duplicates were removed and screened after which 52 studies were included. The data were plotted in a systematic framework that included model type, integration of risk assessment, diversion mechanism, multidisciplinary involvement and outcome evaluation. Findings: The percentage of identified systems which were secure forensic service models (46.2) was followed by diversion-oriented pathways (28.8) and community-integrated models (17.3). Scheduled risk evaluation models were documented in 63.5 % of the models; though less than 10 %utilized neurodevelopment-modified instruments. Even though 73.1% utilized multidisciplinary teams, 17.3% stated formal outcome evaluation. Conclusion: Forensic intellectual disability services are institutionally set-up and under-proven. Monopoly of secure model and low evaluative monitoring and a low degree of neurodevelopment-specific adaptation defines the importance of standardized outcome frameworks, longitudinal assessment and combined diversion pathways to increase equity and accountability of systems.*

**Keywords** Forensic Assessment, Intellectual Disability, Diversion Pathways, Risk Management, Neurodevelopment, Secure Services, Multidisciplinary Care, Criminal Justice Interface.

## Introduction

The intellectually disabled are over-represented in forensic and criminal justice and are often subjected to lengthy institutionalization, restrictive treatment and piecemeal care pathways. Risk management frameworks are usually implemented without proper neurodevelopmental adaptation in inpatient forensic settings, which casts doubts on whether they are fair, valid, and proportional to intervention [2]. Simultaneously, more comprehensive reviews show that there is variation in the provision of mental health services to individuals with mild intellectual disability, implying inconsistency in the access and model construction of such services on a systemic level [9]. These structural differences present the necessity to study the organization, implementation, and evaluation of forensic models of care. Recent literature indicates that there is growing interest in adult with intellectual disability and behavioral complexity rehabilitation; nevertheless, there is a lack of integration of services in the forensic and community settings [3]. Equally, the evidence search on justice-involved intellectual or developmentally disabled people shows a dissimilar framework of interventions and a lack of reporting outcomes [4]. Inequalities in Indigenous people with disability further contribute to the fact that the intersection between justice participation and structural inequalities are paramount [11][12]. Although there is a growing body of literature in forensic mental health and disability services, no synthesis mapping system-level forensic care models of people with intellectual disability exist [17][19]. The value of the current study is that it offers a systematic taxonomy of forensic models of care, it has been able to establish patterns in risk assessment integration, diversion mechanism and outcome evaluation practice across jurisdictions. With a PRISMA-ScR mediated scoping approach, this review takes a step forward in terms of conceptual comprehension of service architecture and implementation voids.

### *The following research questions are answered in the study:*

What are the forensic models of care that are described when dealing with individuals with intellectual disability?

What is the inclusion of risk assessment and diversion mechanisms in these models?

How well are neurodevelopment-specific adaptations and outcome evaluation reported?

The remainder of the paper is organized as follows. Section 2 reviews existing literature on forensic interventions, risk management, implementation frameworks, and workforce considerations. Section 3 outlines the methodology. Section 4 presents the results and structural features. Sections 5 and 6 provide discussion and concluding implications.

## Literature Review

The studies of forensic care of individuals with intellectual disability are effective in terms of intervention, risk management, implementation science and workforce roles. The systematic PRISMA review on the efficacy of offending-behavior interventions in adults with autism spectrum disorder found heterogeneity in the design of the program and a lack of solid outcomes measurement, which highlights the inconsistent methodology issues in the evaluation of efficacy [1]. In the same vein, the analysis of adult rehabilitation models in people with intellectual disability and complex behavioral manifestations suggests multiple pathways which are not sufficient and lacking longitudinal analysis [3]. Extensive scoping evidence on interventions to serve justice-involved persons with intellectual or developmental disabilities affirms heterogeneity of service structure, as well as sparse empirical validation [4]. Management of risks is one of the key elements of forensic systems. The review of the factors contributing to violence and aggression in forensic inpatients reveals that risk expression is multifactorial and depends on situational moderators [7]. The existence of parallel reviews that discuss risk management within the adolescent mental health units shows procedural frameworks but reports a lack of consistency in the implementation fidelity and monitoring [18]. In the area of forensic mental health more generally, implementation research defines organizational preparedness, training the workforce and adapting to the context as decisive factors of sustainable service delivery [5] [20]. The role of workforce also influences the effectiveness of models.

Survey papers of the forensic mental health nursing field characterize role uncertainty and inadequate competency outlines among different systems [6]. Within the intellectual disability context, nursing interventions play a key role in the behavioral management and coordination of care, although systematic and integrated aspects of the involvement of forensic pathways are not yet developed [10]. Professional frameworks that have evolved

in advanced practice roles in learning disability services are associated with lack of forensic specialization [13][14]. Another theme that comes out as critical is equity consideration. The literature on culturally sensitive forensic mental healthcare on racialized people demonstrates that services have not been sufficiently adjusted to the needs of diverse groups of people [8]. Recovery-focused and substance use interventions, despite gaining more and more integration into psychiatric systems, are not always tailored to intellectual disability groups in a forensic setting [15][16].

Overall, the literature has shown the presence of three trends, namely the extensive use of formal risk management frameworks, the lack of neurodevelopment-specific adaptation, and inadequate outcome assessment. Although several scoping reviews and systematic reviews focus on specific elements of forensic services or disability services, a synthesis mapping structural typologies of forensic care models of persons with intellectual disability does not exist. The current study fills this void since it classifies existing models methodically and pinpoints implementation and evaluating shortcomings at the system level.

## Materials and Methods

### Study Design and Search Strategy

This paper used a scoping review approach based on PRISMA Extension of Scoping Reviews (PRISMA-ScR) methodology. The scoping design was chosen because of the heterogeneity of forensic service models to people with intellectual disability and lack of synthesis on a system basis. The aim was to chart the current models of care, define their structural aspects and find gaps in care implementation and evaluation.

The systematic electronic search has been done at PubMed, Scopus, and Embase. The search was conducted on publications since January 2000 and up to March 2025. Keywords were a combination of controlled vocabulary and variations of the keywords which included intellectual disability, forensic services, diversion mechanism, risk assessment, secure care and neurodevelopment in criminal justice systems. Refinement combinations were done using the Boolean operators and database specific indexing terms were also used where necessary. Eligible studies were manually screened on reference list to ensure completeness.

### Eligibility Criteria

Research studies were chosen using pre-existing inclusion and exclusion criteria. Peer-reviewed empirical studies that contained structured models of forensic care, diversion pathways, integrated forensic-community systems or formalized risk management frameworks that involve individuals with intellectual disability were eligible studies. Table 1 illustrates the eligibility system.

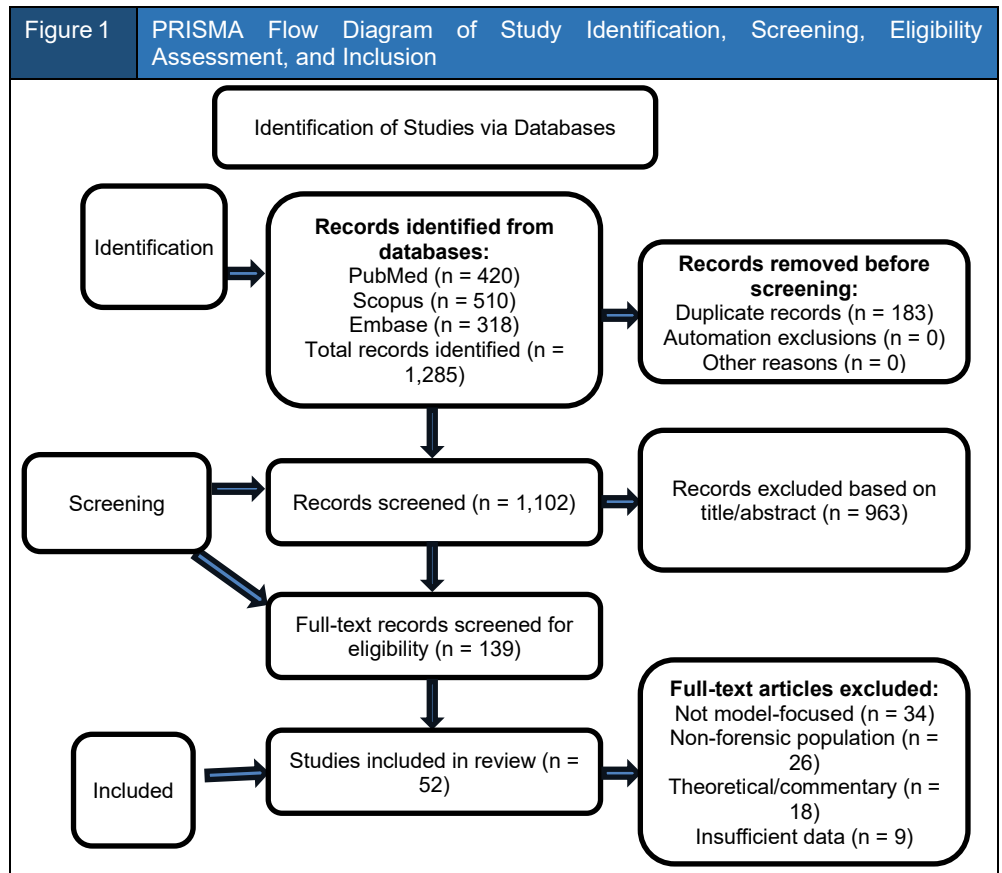
Table 1		Eligibility Criteria	
Domain	Inclusion Criteria	Exclusion Criteria	
Population	Individuals with intellectual disability in forensic or criminal justice settings	Non-forensic populations	
Study Type	Empirical studies describing structured forensic models or care pathways	Purely theoretical or commentary papers	
Focus	Diversion frameworks, risk assessment systems, secure or community forensic models	Case reports without system-level description	
Reporting Language	Sufficient methodological detail English	Insufficient methodological reporting Non-English publications	

### Study Selection Process

The database search had found 1,285 records. There were 1,102 studies that survived after a tally of 183 duplicate records were excluded and then underwent title and abstract screening. In the process of screening, 963 records were eliminated due to the lack of eligibility. It was evaluated on 139 full-text articles. After reading the entire text, 87 studies were eliminated because of absence of model focus, non-forensic population, theoretical or commentary research design or absence of methodological detail. Finally, the final synthesis included 52 studies which passed the inclusion criteria. A process of the selection is depicted in Figure 1.

## Data Extraction and Synthesis

A systematic data-charting system was designed in order to isolate the most significant features of the studies, such as jurisdiction, modelling typology, forensic setting, risk assessment tools, diversion tools, level of security, and outcome evaluation. The extraction of data was done in a systematic manner and cross-verified to achieve consistency.



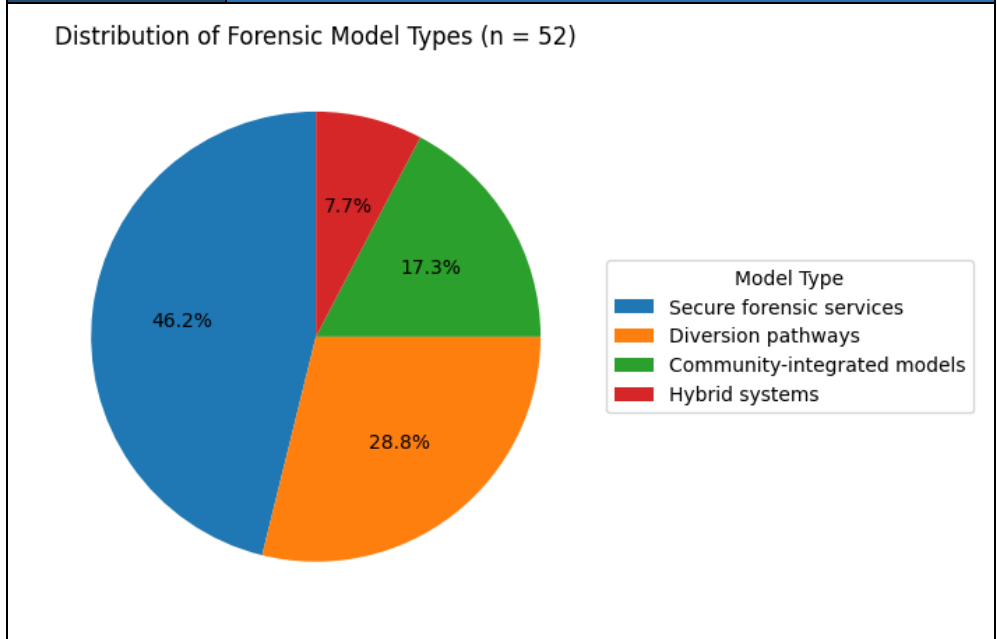
The analytical approach used was descriptive since there was conceptual and methodological heterogeneity in the studies. Models were broken down into secure forensic services, diversion-oriented pathways, community-based systems and hybrid multidisciplinary models. Proportional and frequencies were used to summarize the structural patterns. There was inconsistency in the outcome measures and study designs which reasoned against the use of meta-analytic techniques.

## Results

### Study Characteristics and Model Typology

Out of the inclusion criteria, 52 studies were included and added to the final synthesis. The contained studies reported dissimilar forensic service systems among jurisdictions, which were diverse with institutional structure, diversion schemes, and synthesis of risk management. Figure indicates the distribution of identified types of forensic models. The largest percentage of identified systems was secure forensic service models (n = 24; 46.2%). The models that were diversion-oriented were 28.8 (n=15), and community-integrated forensic systems were 17.3 (n=9). The least represented (n = 4; 7.7%) were hybrid multidisciplinary systems. These results denote a preponderant dependence on sure institutional designs, and a relative deficiency of incorporated or diversion-focused designs. Figure 2 graphically illustrates proportional representation among the categories of models.

**Figure 2** Proportional Distribution of Forensic Model Types Included in the Scoping Review



The chart shows that about 50 % of the models found are based on the secure forensic service structures and the diversion and community integrative models have a total of less than half of the overall models. Hybrid models are not very common.

### Structural and Clinical Features of Identified Models

Table 2 contains the summary of structural and clinical characteristics of the included models. Those that had a structured risk assessment framework were 33 (63.5) studies which showed that majority of these models utilize some formalized evaluation processes in forensic risk management. Only in 21 studies, diversion mechanisms were found (40.4%), and this indicates moderate alternative justice pathways integration. In 38 (73.1) studies, the multidisciplinary engagement was reported, which is indicative of the interdisciplinary character of forensic intellectual disability services. Nonetheless, only 9 studies (17.3%) reported formal outcome evaluation, which is not a significant amount of empirical validation of model efficacy. The neurodevelopment-adapted risk tools were found in only 5 studies (9.6%), which indicates a significant deficit in risk adaptation in disability.

Table 2	Structural and Clinical Features Across Models (n = 52)	
Feature	Present (n)	Percentage (%)
Structured risk assessment framework	33	63.5
Formal diversion mechanism	21	40.4
Multidisciplinary team involvement	38	73.1
Outcome evaluation reported	9	17.3
Neurodevelopment-adapted risk tools	5	9.6

On the whole, the results have shown that the concepts of structured risk assessment and multidisciplinary collaboration are widely used in forensic intellectual disability models, but there is little empirical testing of it. The literature is dominated by models that identify as secure forensic services, and models that are fully integrated diversion-based or community-oriented are underrepresented in the literature. Also, the low rates of neurodevelopment-specific risk adaptation illustrate a severe methodological and clinical deficiency in the existing forensic care models.

### Cross-Tabulation Analysis

A cross-tabulation comparing model type and the presence of formal outcome evaluation was used to test structural differences between model types as in Table 3.

Model Type	Outcome Evaluation Present (n)	Outcome Evaluation Absent (n)	Total (n)
Secure forensic services	3	21	24
Diversion-focused pathways	4	11	15
Community-integrated models	2	7	9
Hybrid multidisciplinary systems	0	4	4
Total	9	43	52

Outcome evaluation was present in only 9 of the 52 models (17.3%). Diversion-focused pathways demonstrated slightly greater evaluation frequency relative to secure institutional models (4 vs. 3 studies), despite representing a smaller proportion of the total sample. Hybrid systems showed no formal outcome reporting. Secure forensic service models, although most prevalent (n = 24), demonstrated limited empirical validation, with 87.5% lacking reported outcome data. This implies that dominance of institutions is not associated with better evidence of evaluation. There was a modest outcome reporting in community-integrated models (2 of 9) and it is possible to state that there is still emergent but weak empirical monitoring of community-based systems.

## Discussion

In this scoping review there were 52 published papers representing forensic models of care addressing people with intellectual disability identified, and there was a significant heterogeneity in the structure across jurisdictions. The institutional or custodial systems were mainly used since secure forensic service models were identified as almost half of the known system (46.2%). By contrast, less commonly reported were so-called diversion-based pathways (28.8%) and community-based models (17.3%), indicating that other types of justice are still relatively poorly represented in the literature. Even though established frameworks of risk assessment were available in 63.5% of models, the neurodevelopment-adapted risk tools were found in less than 10% of studies. This disproportion underscores an important conceptual loophole the standardization of the assessment process is extremely widespread but is seldom applied based on the intellectual disability characteristics of cognitive and adaptive functioning. The fact that risk protocols have been adapted poorly makes questions on validity, fairness, and predictive accuracy in the forensic disability cohort. 73.1 % of models reported multidisciplinary involvement due to the awareness of the complex clinical, behavioral and legal needs of this population. Nevertheless, formal outcome evaluation was reported in 17.3 % of studies.

This result implies that the structural components may tend to be described, but there are few results that are empirically validated to be effective. It does not seem that institutional dominance is related to the stronger systems of evaluation, so the implementation can be rather shaped by the system tradition than by the evidence-based outcomes. In the systems view, it can be possible that risk avoidance and priority to public safety can be manifested by the concentration of models in safe environments. Nevertheless, the relatively lower proportion of representation of diversion and community-integrated systems implies the missed chances of the early intervention and less exposure to custody. The underreporting of longitudinal or recidivism results also limit the insight into the long-term effectiveness. Comprehensively, the results demonstrate an imbalance in the structure: the way of formal risk assessment and multidisciplinary teams is extensively used, whereas outcomes monitoring and adaptation based on neurodevelopment peculiarities is minimal. The trend highlights the use of standard assessment systems in forensic intellectual disability provision.

## Conclusion

It was a PRISMA-ScR led scoping review which synthesized 52 studies describing forensic models of care of individuals with intellectual disability and found that there was significant structural variation across jurisdictions. The percentage of identified systems comprising secure forensic service models was 46.2, whereas the rates of those involving diversion-focused pathways and community-integrated models were 28.8 and 17.3, respectively. Even though 63.5% of models and 73.1% of multidisciplinary teams reported their structured risk assessment frameworks and involvement, respectively, 17.3% of them incorporated formal outcome evaluation. Moreover, less than one out of ten studies mentioned neurodevelopment-specifics to risk assessment measures. These results show that forensic intellectual disability services are organizationally in place, but are empirically underscored and disability-sensitive measurements are minimal. The pre-eminence of secure institutional model, the relative underrepresentation of diversion and community-integrated model implies that forensic systems are still relying on custodial models. The scarcity of

standardized outcome monitoring hinders the effectiveness measures, recidivism decrease, and long-term community re-entry measures.

Various constraints are to be admitted. Only English-language peer-reviewed publications were contained in the review, which could have missed any grey literature or jurisdictional reports. Scattered reports quality also limited direct comparison across models and the scoping design prevented inferential statistical analysis. The primary areas of research interest in the future are longitudinal outcome evaluation, comparative evaluation of diversion and secure service pathways, and creation of validated neurodevelopment-adapted risk instruments. Standardized reporting and the collaboration across jurisdictions with other jurisdictions will be needed to enhance evidence-based forensic care and enhance fairness in the intellectual disability groups engaged in justice systems.

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