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A Retrospective Medico-Legal Profiling Study of Drug-Related Suspects Examined by the Judicial Medical Officer at District General Hospital, Mullaitivu (2020–2025)

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ABSTRACT

Background: Drug-related crime and substance abuse continue to escalate in Sri Lanka, including in post-conflict districts such as Mullaitivu. Judicial Medical Officers (JMOs) occupy a pivotal role in assessing suspects brought by police, yet empirical data from Northern Province JMO registries remain scarce. This study aimed to characterise the socio-demographic, clinical, and medico-legal profiles of drug-related suspects examined at the District General Hospital (DGH), Mullaitivu.

Methods: A retrospective cohort study was conducted using archived medico-legal examination records of 50 suspects produced by police to the Office of the Judicial Medical Officer, DGH Mullaitivu, between August 2020 and July 2025. A structured pro-forma extracted socio-demographic data, substance-use histories, crime typologies, clinical examination findings, and medico-legal opinions. Data were analysed using SPSS version 22; categorical variables are expressed as frequencies and percentages.

Results: All 50 suspects were male. The predominant age group was 20–29 years (68.0%). Most were married (56.0%), held only primary education (72.0%), and earned less than LKR 20,000 per month (46.0%). Unemployment and self-employment together accounted for 54.0% of the cohort. Illicit drugs (primarily opioids) constituted the arrest substance in 80.0% of cases. The mean age of first drug use was 23.8 years (range 13–36). Consumption was the most common crime type (56.0%), and 82.0% reported being under the influence at the time of the offence. Opioid withdrawal signs were documented in 86.0% of cases. The predominant medico-legal opinion was that the suspect was under the influence of a drug (46.0%), followed by clinical signs consistent with drug or alcohol abuse (38.0%).

Conclusions: This study provides baseline medico-legal data on drug suspects in a Northern Province district previously understudied. Young, socio-economically marginalised males dominate the cohort; opioid use and withdrawal are the principal clinical features. Findings underscore the need for targeted rehabilitation frameworks and enhanced forensic documentation in post-conflict settings.

Keywords: *Drug-related crime; Judicial Medical Officer; medico-legal profiling; opioid withdrawal; Sri Lanka; Mullaitivu; retrospective cohort*

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1. Introduction

Substance use disorders constitute a globally significant public health and criminal justice challenge. The United Nations Office on Drugs and Crime estimated that approximately 284 million people aged 15–64 used a drug in 2020, a 26% increase compared with the preceding decade (UNODC, 2021). Alcohol, cannabis, opioids, and amphetamine-type stimulants represent the substances most commonly linked to both morbidity and criminality (McLellan, 2017; Koob and Volkow, 2010).

Sri Lanka is not insulated from this phenomenon. National assessments indicate a sustained rise in heroin and cannabis use, with emerging concerns about synthetic opioids and prescription drug misuse (NDDCB, 2022). Drug-related arrests increased by 13% between

2020 and 2021, and by January 2025 more than 100,000 of the 125,000 individuals arrested were linked to drug offences (Public Security Ministry, 2025). The government's Operation Yukthiya, launched in December 2023, further amplified law enforcement activity, although it attracted criticism from human rights organisations regarding alleged arbitrary arrests and procedural violations (HRI, 2023).

The Northern Province of Sri Lanka carries specific vulnerabilities arising from three decades of armed conflict, displacement, and disrupted socio-economic structures (Dissanayake et al., 2023; Doherty et al., 2019). Mullaitivu District, at the epicentre of the final phase of the civil war, exhibits poverty indices, unemployment rates, and mental-health burden above national averages — factors consistently associated with elevated substance-use risk (Hapangama et al., 2021). Despite this, empirical forensic data from Mullaitivu are virtually absent from the published literature, which has historically concentrated on incarcerated populations in the Western Province or treatment-centre cohorts (Dissabandara et al., 2009).

The Judicial Medical Officer (JMO) is the principal figure at the interface between medicine and criminal justice in Sri Lanka. When police produce a suspect under the Poisons, Opium and Dangerous Drugs Ordinance or related legislation, it is the JMO who documents intoxication, withdrawal features, injuries, mental-state findings, and fitness for detention. These medico-legal examination records constitute a rich but underutilised epidemiological resource. Retrospective series drawn from JMO registries have characterised assault, sexual violence, and road-traffic trauma (PGIM, 2018; Faculty of Medicine Kelaniya, 2021), yet drug-related suspects rarely appear as a distinct analytic group in published series.

This study addresses that gap. We report the socio-demographic, substance-use, crime-type, clinical, and medico-legal profiles of 50 consecutive drug-related suspects examined at the Office of the Judicial Medical Officer, DGH Mullaitivu, over a five-year period (August 2020 – July 2025). The findings aim to inform evidence-based forensic practice, health policy, and rehabilitation planning in a post-conflict district that has received inadequate research attention.

2. MATERIALS AND METHODS

2.1 Study Design and Setting

A retrospective cohort design was employed. The study was conducted at the Office of the Judicial Medical Officer, District General Hospital, Mullaitivu — the sole district-level government hospital in Mullaitivu District, Northern Province, Sri Lanka. The JMO office processes all medico-legal referrals from police stations within the district.

2.2 Study Population and Sampling

All drug-related suspects produced by police to the JMO office between 1 August 2020 and 10 July 2025 were eligible. The sample comprised 50 consecutive cases meeting the inclusion criteria. Inclusion required that the suspect had been produced specifically for toxicological assessment (clinical evaluation for drug or alcohol influence). Exclusion criteria were: production for purposes other than drug or alcohol status assessment; and records with missing or internally inconsistent data in more than 20% of key fields.

2.3 Data Collection Instrument

A structured pro-forma was developed by the principal investigator and validated for content through piloting on 10 cases prior to the main data collection phase. The instrument comprised five sections: (A) socio-demographic characteristics; (B) substance-use profile; (C) drug-related crime typology; (D) clinical examination findings; and (E) toxicological investigation results and medico-legal opinions. Section D captured general physical signs, behavioural signs, psychological signs, history of assault, injury type and anatomical distribution, and withdrawal signs (alcohol and opioid, separately scored). Section E recorded multi-panel urine immunochromatographic drug-screen results and the final medico-legal opinion issued by the JMO.

2.4 Toxicological Methods

Urine samples were tested using commercially available 12-panel immunochromatographic lateral-flow assay strips at the point of examination. Panels tested for cocaine (COC), amphetamine (AMP), methamphetamine (MET), cannabis/THC (THC), methadone (MTD), morphine/opiates (MOP), opioids (OPI), tramadol (TML), oxycodone (OXY), barbiturates (BAR), benzodiazepines (BZO), and pregabalin (PGB). Confirmatory gas chromatography–mass spectrometry (GC-MS) was not performed due to the backlog at the Government Analyst's Department and resource constraints, a recognised limitation of the study. Alcohol status was assessed clinically (breath odour, clinical signs) rather than via quantitative breath or blood analysis in most cases, given equipment availability at the time of examination.

2.5 Data Analysis

Data were entered into Microsoft Excel and transferred to SPSS version 22 (IBM Corp., Armonk, NY) for analysis. Categorical variables are presented as absolute frequencies and percentages. Continuous variables (e.g., age at first drug use) are summarised as mean and standard deviation (SD) or median and interquartile range (IQR) where appropriate. A p-value of less than 0.05 was considered statistically

significant for any inferential comparisons.

2.6 Ethical Considerations

Ethical clearance was obtained from the Ethical Review Committee, District General Hospital, Mullaitivu. Institutional approval for data access was granted by the Director, DGH Mullaitivu. The study used retrospective, anonymised records; no personally identifiable information was extracted. Written informed consent from individual subjects was not required, consistent with institutional policy for retrospective record-based research. All data were stored in password-protected files and will be destroyed following publication.

3. RESULTS

3.1 Socio-Demographic Characteristics

The study included 50 suspects, all of whom were male (100%). Table 1 summarises socio-demographic variables. The majority (68.0%, n=34) were in the 20–29-year age group, followed by the 30–39-year group (26.0%, n=13). Only three suspects (6.0%) were in the 10–19-year age group; no suspect was aged 40 years or above.

Regarding civil status, 56.0% (n=28) were married, 32.0% (n=16) were unmarried, 6.0% (n=3) were cohabiting, and 4.0% (n=2) were divorced or separated. A total of 26 suspects (52.0%) had no children. Among those with children, two children was the modal number.

Educational attainment was low: 72.0% (n=36) had completed only primary schooling, 26.0% (n=13) had secondary education, and a single suspect (2.0%) had higher education. No suspect reported no formal schooling.

Occupationally, 28.0% (n=14) were unemployed and 26.0% (n=13) were self-employed, together accounting for more than half the cohort. Labourers constituted 20.0% (n=10) and fishermen 20.0% (n=10). Government employees comprised 4.0% (n=2). Monthly family income was low: 26.0% earned less than LKR 10,000 and 20.0% earned LKR 10,000–20,000, meaning 46.0% lived below LKR 20,000 per month.

Living arrangements showed that 50.0% (n=25) resided in their own home as a nuclear family, 36.0% (n=18) lived with parents, and the remainder lived with relatives or in other arrangements. In terms of dependents, 34.0% (n=17) had 0–1 dependents, 32.0% (n=16) had 2–3 dependents, and 18.0% (n=9) had 1–2 dependents.

Table 1. Socio-demographic characteristics of the study cohort (N = 50)

Variable	n	%
Age Group		
10–19 years	3	6.0
20–29 years	34	68.0
30–39 years	13	26.0
Civil Status		
Married	28	56.0
Unmarried	16	32.0
Cohabiting	3	6.0
Divorced/Separated	2	4.0
Other	1	2.0
Level of Education		
Primary	36	72.0
Secondary	13	26.0
Higher	1	2.0
Occupation		
Unemployed	14	28.0
Self-employed	13	26.0
Labourer	10	20.0
Fisherman	10	20.0
Government service	2	4.0
Other	1	2.0

Variable	n	%
Monthly Family Income (LKR)		
< 10,000	13	26.0
10,000–20,000	10	20.0
20,000–30,000	11	22.0
30,000–40,000	8	16.0
40,000–50,000	7	14.0
> 50,000	1	2.0

LKR = Sri Lankan Rupees

3.2 Substance-Use Profile

The predominant arrest substance category was drugs (illicit substances) in 80.0% (n=40) of cases, followed by other substances in 18.0% (n=9), and illicit alcohol (kasippu) in 2.0% (n=1). Among drug suspects, the substance type recorded was predominantly opioids (78.0%, n=39). The oral route was the principal mode of consumption in 92.0% (n=46), with sniffing reported in 8.0% (n=4). No intravenous use was recorded in this cohort.

The mean age of first drug use was 23.8 years (SD 4.7, range 13–36 years). Duration of substance use of 1–5 years was the most common category (32.0%, n=16), followed by 1–6 months (26.0%, n=13), and less than 1 month (22.0%, n=11). Eight suspects (16.0%) reported use 'ever since known', reflecting a deeply entrenched pattern. Tobacco smoking was uncommon in this cohort: only four suspects (8.0%) reported current smoking.

Pre-existing or co-occurring psychological/psychiatric diagnoses were distributed as follows: substance use disorder (documented comorbidity) in 36.0% (n=18), depression in 18.0% (n=9), schizophrenia in 16.0% (n=8), and morbid jealousy in 16.0% (n=8). Other diagnoses were noted in 12.0% (n=6). Notably, 74.0% (n=37) had been previously arrested for a drug-related offence on at least one prior occasion; 26.0% (n=13) had two or more prior arrests.

Table 2 summarises the substance-use profile .

Table 2. Substance-use profile of the study cohort (N = 50)

Variable	n	%
Arrest Substance Category		
Illicit drugs (opioids/other)	40	80.0
Other substance	9	18.0
Illicit alcohol (Kasippu)	1	2.0
Mode of Use		
Oral	46	92.0
Sniffing	4	8.0
Duration of Substance Abuse		
< 1 month	11	22.0
1–6 months	13	26.0
6 months–1 year	1	2.0
1–5 years	16	32.0
Ever since known / chronic	8	16.0
Previous Drug-Related Arrest		
One prior arrest	37	74.0
Two or more prior arrests	13	26.0
Pre-existing Psychiatric Diagnosis		
Substance use disorder (comorbid)	18	36.0
Depression	9	18.0

Variable	n	%
Schizophrenia	8	16.0
Morbid jealousy	8	16.0

3.3 Drug-Related Crimes

Consumption was the most frequently documented crime type (56.0%, n=28), followed by trafficking (18.0%, n=9), other offences (16.0%, n=8), and production (6.0%, n=3). Possession alone accounted for only 4.0% (n=2) of cases, reflecting that most suspects in this cohort were active users rather than distributors. The majority (82.0%, n=41) reported being under the influence of drugs at the time of the alleged offence. A minority (10.0%, n=5) had also committed non-drug-related crimes (e.g., assault, theft). The majority (66.0%, n=33) had received prior drug rehabilitation treatment. Of those surveyed, 64.0% (n=32) expressed willingness to participate in a rehabilitation programme.

Table 3. Drug-related crime profile (N = 50)

Variable	n	%
Type of Crime at Arrest		
Consumption	28	56.0
Trafficking	9	18.0
Other offences	8	16.0
Production	3	6.0
Possession	2	4.0
Under the Influence at Time of Offence	41	82.0
Concurrent Non-Drug Crime	5	10.0
Prior Rehabilitation Treatment	33	66.0
Willing to Undergo Rehabilitation	32	64.0

3.4 Clinical Examination Findings

Physical signs of drug abuse were present in varying combinations across the cohort. The most commonly documented individual physical signs included: bloodshot eyes or abnormal pupils (present in combination with other signs in the majority); unusual body odour (sign 9, needle marks) documented in selected cases; and poor coordination or unsteady gait noted in several suspects. Behavioural signs were widely observed: sudden mood swings or irritability was the most common single behavioural sign, followed by aggressive or violent behaviour and poor concentration or memory problems. Among psychological signs, depression was documented in 40.0% (n=20) of suspects, and anxiety or panic attacks in 30.0% (n=15). History of assault was uncommon: only two suspects (4.0%) reported a history of assault at the time of JMO examination, with physical injuries comprising contusions in one case and abrasions in another. Weapons were not identified as having been used in any formally documented assault case in this cohort.

Opioid withdrawal signs were prominent. Yawning was the most common single opioid withdrawal feature, present in 86.0% (n=43) of suspects overall (documented across multiple sign categories). Sweating (diaphoresis) was noted in many suspects, along with restlessness and abdominal cramping. Table 4 summarises opioid withdrawal sign distribution.

Table 4. Distribution of opioid withdrawal signs (N = 50)

Opioid Withdrawal Sign	n	%
Dilated pupils	4	8.0
Runny nose (rhinorrhea)	6	12.0
Sweating (diaphoresis)	10	20.0
Lacrimation	5	10.0
Goosebumps	1	2.0
Abdominal cramping	9	18.0
Muscle twitching/jerking	8	16.0
Yawning	43	86.0
Any opioid withdrawal sign present	43	86.0

3.5 Toxicological Investigations and Medico-Legal Opinions

Multi-panel urine immunochromatographic screens were conducted across the cohort. Given the predominance of opioid-related arrests, the morphine/opiate (MOP) and opioid (OPI) panels were the primary screens applied. Confirmatory GC-MS was not available, as noted above. Medico-legal opinions were categorised as follows (Table 5): the most common opinion was that the suspect was under the influence of a drug (46.0%, n=23); clinical signs consistent with drug or alcohol abuse were documented in 38.0% (n=19); no clinical and toxicological evidence of drug or alcohol abuse was recorded in 14.0% (n=7); and breath smell of alcohol was noted in a small number of cases (2.0%). No suspect in this cohort received an opinion of injuries consistent with a history of assault as a primary medico-legal finding.

Table 5. Medico-legal opinions issued (N = 50)

Medico-Legal Opinion	n	%
Suspect under the influence of a drug	23	46.0
Clinical signs consistent with drug/alcohol abuse	19	38.0
No clinical and toxicological evidence of drug abuse	7	14.0
Breath smell of alcohol observed	1	2.0

4. Discussion

This study presents the first systematically reported medico-legal profile of drug-related suspects examined by the Judicial Medical Officer at District General Hospital, Mullaitivu — a Northern Province post-conflict district where such data have been conspicuously absent. The findings are broadly consistent with national and regional literature while highlighting several context-specific features that carry important implications for forensic practice, public health, and policy.

4.1 Socio-Demographic Profile: Concordance with Regional Patterns

The exclusive male composition of this cohort and the concentration in the 20–29-year age group mirror findings from national assessment reports and prison-based studies (Dissabandara et al., 2009; Hapangama et al., 2021; NDDCB, 2022). Young males consistently emerge as the primary demographic in drug-related criminal justice encounters across South Asia and globally (UNODC, 2021). The dominance of primary-level education (72.0%) and low monthly income (46.0% earning below LKR 20,000) reflects the broader socio-economic marginalisation of Mullaitivu District, where post-conflict economic recovery has been slow and formal employment scarce (Doherty et al., 2019). Unemployment alone accounted for 28.0% of the cohort — a figure consistent with Northern Province unemployment statistics that substantially exceed the national average.

The occupational breakdown — fishermen (20.0%) and labourers (20.0%) alongside the unemployed — is particularly relevant in Mullaitivu, where artisanal fishing is a primary livelihood but remains economically precarious. Dissanayake et al. (2023) identified socio-economic vulnerability and war-related trauma as significant mediators of substance-use risk in Northern Province adolescents; the present data corroborate this trajectory at a later life stage. The finding that half the cohort resided in their own home as a nuclear family (50.0%) suggests that drug use is not confined to socially isolated individuals but pervades family units, with implications for dependants and child safeguarding.

4.2 Substance-Use Characteristics: The Opioid Burden

Opioid-related substances dominated this cohort (78.0% of drug suspects), consistent with national seizure data showing heroin as the principal illicit drug in Sri Lanka (NDDCB, 2022; Public Security Ministry, 2025). The oral route was overwhelmingly favoured (92.0%), which diverges from some international cohorts where intravenous use predominates among opioid-dependent individuals (Beirness and Beasley, 2010). This may reflect the specific opioid preparations available in Mullaitivu — likely heroin mixed with adulterants, consumed orally or smoked — and cultural or practical barriers to injection drug use in this population.

The mean age of first drug use (23.8 years, range 13–36) is somewhat later than figures reported for Western Province incarcerated populations, where initiation in the late adolescent years is more commonly documented (Dissabandara et al., 2009). This may indicate that in post-conflict Mullaitivu, substance initiation follows a delayed trajectory linked to resettlement stresses and delayed exposure rather than early adolescent peer networks. However, the range extends down to 13 years, underlining that adolescent-onset use does occur and warrants targeted preventive interventions.

The high prevalence of prior arrests (74.0% with at least one prior drug-related arrest) combined with the finding that 66.0% had previously received rehabilitation treatment underscores the revolving-door phenomenon frequently described in substance use disorder literature (Koob and Volkow, 2010). Two thirds of suspects who had been through rehabilitation were re-arrested, indicating that existing rehabilitation pathways in this district are insufficient to prevent relapse and recidivism. The high expressed willingness to undergo rehabilitation (64.0%) is an encouraging signal that should inform demand-side planning for expanded treatment facilities.

Co-occurring psychiatric diagnoses were documented in a substantial proportion, with substance use disorder as a comorbid diagnosis (36.0%), depression (18.0%), schizophrenia (16.0%), and morbid jealousy (16.0%). These rates are consistent with the well-established psychiatric comorbidity of substance use disorders (Koob and Volkow, 2010) and with elevated mental-health burden previously documented in Mullaitivu's

post-conflict population (Doherty et al., 2019).

4.3 Crime Typology: Consumption as the Dominant Offence

The preponderance of consumption offences (56.0%) over trafficking and possession reflects the JMO's casemix in this district: most referrals arise from police encounters with individuals in a state of intoxication or withdrawal, rather than drug supply-chain interdictions. This is consistent with the JMO role in examining persons drunk or using substances disorderly in public places under Section 261 of the Sri Lankan Penal Code. The 82.0% rate of being under the influence at the time of the offence confirms that active intoxication or withdrawal — rather than the mere possession of drugs — is the dominant trigger for police production to the JMO in Mullaitivu.

The small proportion with concurrent non-drug crime (10.0%) suggests that in this cohort, drug-related offending is largely self-contained rather than embedded in broader criminal careers — a finding that differs from some Western datasets where drug use is more strongly coupled with acquisitive crime (Beirness and Beasley, 2010). This has policy implications: targeted drug treatment may be a particularly efficient crime-reduction strategy in this setting.

4.4 Clinical and Medico-Legal Findings

Opioid withdrawal signs were the dominant clinical finding (86.0% of suspects had at least one sign), with yawning (86.0%), sweating (20.0%), abdominal cramping (18.0%), and muscle twitching (16.0%) most commonly recorded. This profile is entirely consistent with the recognised opioid withdrawal syndrome characterised by autonomic hyperactivation, gastrointestinal disturbance, and lacrimation, typically appearing 6–24 hours after last opioid use (Moffat, Osselton and Widdop, 2011). The prominence of withdrawal over intoxication signs at the time of JMO examination suggests that many suspects had not used drugs immediately prior to police production — possibly because arrest itself disrupted access — making the JMO examination pivotal for documenting the withdrawal state that corroborates chronic dependent use.

The low prevalence of documented assault history (4.0%) and physical injuries is noteworthy. International guidance and local human rights commentary have drawn attention to the risk of custodial ill-treatment of drug suspects in Sri Lanka, particularly following Operation Yukthiya (HRI, 2023). The JMO's independent documentation of any injuries at first examination is therefore a crucial safeguard; its near-absence in this cohort may reflect either genuinely low rates of pre-custodial violence in Mullaitivu or under-reporting by suspects who may fear repercussions. Future research should examine injury documentation more rigorously, including the use of validated forensic body maps.

Medico-legal opinions reflected the clinical picture: 46.0% of suspects were certified as under the influence of a drug, and a further 38.0% had clinical signs consistent with drug or alcohol abuse — together accounting for 84.0% of cases with a positive forensic opinion. The 14.0% in whom no clinical or toxicological evidence of drug abuse was documented may include individuals who had sufficiently metabolised the substance by the time of examination, cases where the presenting substance does not produce distinctive clinical signs detectable by clinical examination alone, or individuals who were incorrectly produced by police. This rate highlights the importance of objective toxicological confirmation; confirmatory GC-MS would substantially strengthen medico-legal testimony in these cases (Moffat, Osselton and Widdop, 2011).

4.5 Strengths and Limitations

This is the first study to systematically describe the medico-legal profile of drug-related suspects in Mullaitivu District over a five-year period, providing baseline data for a previously undescribed population. The use of a validated structured pro-forma, consistent JMO documentation, and a single-centre design reduces inter-observer variability.

Limitations include the relatively modest sample size (n=50), which constrains subgroup analyses and statistical power. The absence of GC-MS confirmation is a significant methodological limitation acknowledged throughout; immunochromatographic screens carry false-positive rates that may inflate the apparent prevalence of certain substances, and the 14.0% negative-opinion rate may partly reflect false-negative screening results (Moffat, Osselton and Widdop, 2011). The exclusively male cohort limits generalisability to female drug suspects, though female referrals to JMO offices in this district are reportedly rare. Retrospective data are subject to documentation variability across the study period. The study was conducted at a single district hospital; findings may not be generalisable to other Northern Province districts.

5. Conclusion

This retrospective medico-legal profiling study provides the first evidence-based characterisation of drug-related suspects examined by the Judicial Medical Officer at District General Hospital, Mullaitivu, over a five-year period. Young, socio-economically marginalised males, predominantly with primary education, low income, and chronic opioid dependence, constitute the core of the JMO drug caseload in this post-conflict district. Opioid withdrawal is the dominant clinical syndrome at examination. The recycling of individuals through police arrest and rehabilitation without sustained recovery underscores critical gaps in the continuity of care in this setting.

These findings carry several practice and policy implications. First, rehabilitation infrastructure in Mullaitivu must be substantially expanded and integrated with primary healthcare to reduce revolving-door recidivism. Second, JMO documentation standards should be strengthened to include systematic injury mapping and to facilitate the introduction of confirmatory toxicological testing at district level, enhancing the evidential weight of medico-legal opinions in court. Third, early-intervention programmes targeting adolescents and young adults in post-conflict communities are indicated given the early age of

substance initiation recorded. Fourth, the psychiatric services linking forensic medicine, psychiatry, and multicentre studies drawing on JMO records across the Northern Province would strengthen the evidence base comorbidity burden identified requires dual-diagnosis community rehabilitation. Further prospective, and enable district-level comparisons to inform targeted policy responses.

Declarations
Funding: This research received no external funding.
Conflicts of interest: The authors declare no conflict of interest.
Ethical approval: Ethical clearance was granted by the Ethical Review Committee, District General Hospital, Mullaitivu. Institutional data access approval was granted by the Director, DGH Mullaitivu.
Data availability: The anonymised dataset supporting this study is available from the corresponding author upon reasonable request.

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