

A CALL FOR LEGALISATION OF CANNABIS THROUGH THE NHS

*Evidence, patient autonomy, product safety, illicit-market displacement and a
proposed four-product NHS regulatory model*

Research and policy analysis
28 September 2026

Purpose and status

This paper is a policy proposal and evidence synthesis. It is not individual medical advice, legal advice, or a claim that cannabis is harmless. It distinguishes established medical evidence from promising, limited and unsupported claims, and separates observed market changes from causal hypotheses about prohibition.

Executive summary

The United Kingdom already accepts the central medical proposition on which this paper rests: cannabis-derived medicines can have therapeutic value. Since 1 November 2018, qualifying cannabis-based products for medicinal use (CBPMs) have had a lawful Schedule 2 route. NICE recommends cannabidiol for defined severe epilepsies, THC:CBD spray for qualifying multiple-sclerosis spasticity, and nabilone for refractory chemotherapy-induced nausea and vomiting. The contested question is therefore no longer whether cannabinoid medicines can ever be medicine. It is how broadly, safely and equitably access should be organised (Home Office, 2018; NICE, 2019-2023; NHS England, 2026).

This paper proposes a regulated NHS-centred model in which adult cannabis supply is moved away from an untested illicit market and towards a small number of standardised, independently tested reference products. The proposal is intentionally simpler than the present private market: four NHS reference chemovars or formulations, defined by reproducible cannabinoid profiles rather than commercial strain names; explicit screening for synthetic cannabinoid receptor agonists (SCRAs/‘Spice’); full batch traceability; pharmaceutical contaminant controls; clinical recording; pharmacovigilance; and a non-judgemental pathway that allows patients to disclose use without routine criminal-enforcement consequences.

The argument is not that all cannabis use is medical, or that every reported benefit is clinically proven. Cannabis is also used for relaxation, pleasure, socialising and curiosity. EUDA survey data show that medical, social and recreational motives overlap: 78% of respondents reported stress reduction/relaxation, 70% getting high/fun, 51% sleep, 39% depression/anxiety, 35% socialising and 24% pain/inflammation (EUDA, 2022). A healthcare system that sees only ‘misuse’ can therefore miss genuine symptom management; a healthcare system that calls every use ‘treatment’ would make the opposite error.

The economic scale is material. The Home Office’s September 2026 estimate places annual illicit cannabis expenditure in England and Wales at about £2.3 billion, based on approximately 2.7 million users and 205 million use-days. The Home Office explicitly acknowledges this as an underestimate; substituting the Adult Psychiatric Morbidity Survey produces £3.6 billion. These figures are turnover, not profit and not money the NHS could simply collect. They nevertheless establish a multi-billion-pound existing demand from which a regulated market could potentially divert expenditure away from criminal suppliers and generate legitimate wages, taxation, testing capacity and healthcare-linked revenue (Home Office, 2026).

The product-safety case is equally important. Research using voluntarily submitted WEDINOS samples found synthetic cannabinoid receptor agonists in 435 of 1,635 cannabis-related submissions (26.61%). That sample is strongly selection-biased and must not be treated as prevalence in all UK street cannabis. It does, however, prove that people can acquire products believed to be cannabis that contain substantially different psychoactive chemicals. Older literature documents grit, glass, lead and other contaminants or adulterants in illicit cannabis. In contrast, UK prescribed cannabis has experienced real quality failures - including mould, excessive microbial counts and an out-of-specification THC concentration - but the regulated system could trace and recall affected batches (MHRA, 2021; MHRA, 2023; MHRA, 2026).

A further concern is substitution under prohibition. The strongest UK example is synthetic cannabinoids: after first-generation SCRAs were controlled, ACMD documents gaps in generic controls being exploited and further generations appearing. Comparable adaptive mechanisms exist in other drug markets, including methamphetamine precursor changes and some synthetic-opioid markets. This does not prove that every ban inevitably creates a deadlier drug, and cannabis did not chemically ‘turn into’ fentanyl. It does show that persistent demand plus enforcement pressure can reward compact, novel or legally evasive chemistry. Regulation should therefore be assessed not only by whether a prohibited product disappears, but by what replaces it.

International experience shows that a legal market can displace illegal purchasing when it competes on convenience, price and safety. In Canada, reported usual legal purchasing rose from 37% in 2019 to 72% in 2024 while illegal purchasing fell from 16% to 3%; convenience, price and safe supply were the three most commonly

reported influences on source choice (Health Canada, 2024). The illicit market did not disappear, but the evidence contradicts the assumption that consumers inevitably prefer illegal suppliers.

The proposal is therefore a staged experiment in public health rather than a claim of zero risk: standardise products, make quality visible, allow trained GPs to participate within a defined formulary and specialist escalation pathway, protect confidentiality, collect outcomes, price the legal route competitively, and measure displacement of the illegal market, adverse events, NHS utilisation, prescribing patterns, road harm and mental-health outcomes. Where evidence shows harm, change the model. Where evidence shows benefit, expand it.

Core proposition

If a large adult population will obtain cannabis regardless of prohibition, a public-health system should test whether known composition, known dose, clinical visibility, non-judgemental access and regulated price produce less total harm than criminal-market supply. The burden is empirical: compare outcomes, not slogans.

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1. Scope, method and evidential rules

This paper extends two earlier pieces of policy work recovered from the author's research archive: From Punishment to Care (25 August 2026), which examined bodily autonomy, psychoactive drugs, public health and the cost of control; and Law and Policy in Medicine - Evidence Paper v1 (27 September 2026), which distinguished law, professional duties, NICE guidance, NHS commissioning, local policy, clinical judgment, private provision and care displacement. The present paper narrows those frameworks to cannabis and tests a concrete NHS-centred regulatory proposal.

Research questions

- What medical uses of cannabis or cannabinoid medicines are supported by randomised trials, systematic reviews, regulators or clinical guidelines?
- How should patient-reported symptom relief and social/recreational use be distinguished from proven clinical efficacy?
- What quality and adulteration risks exist in unregulated cannabis, and what does the regulated medical supply demonstrably prevent or detect?
- Does the history of synthetic cannabinoids provide evidence that prohibition can generate chemical substitution and greater uncertainty?
- How large is the existing cannabis market, and what proportion could plausibly move into a regulated legal channel?
- Could a deliberately small NHS formulary - four standard reference products - simplify prescribing, trials, procurement, quality assurance and pharmacovigilance?
- What safeguards are required for psychosis-spectrum vulnerability, pregnancy, cardiovascular disease, drug interactions, dependence and driving?

Evidence grading used in this paper

Grade	Meaning
Established / guideline-supported	Accepted licensed or guideline-supported use, or consistent higher-quality clinical evidence.
Supported but modest / conditional	Randomised evidence suggests benefit, but average effect is small, population-specific or limited by adverse effects.
Limited / emerging	Some controlled or consistent observational evidence, but sample size, bias, heterogeneity or replication limits routine claims.
Insufficient / conflicting	Evidence does not permit a reliable treatment claim.
Evidence of no meaningful benefit / not recommended	Controlled evidence or guidelines indicate lack of clinically useful benefit for the specified indication/product.

Causation rule

Chronology is not automatically causation. The paper labels direct market adaptation only where regulators, investigators or credible studies document it. Where multiple forces operated - price, global supply, technology, enforcement, prescribing change, fashion or availability - the paper describes those factors rather than asserting a single cause. Likewise, evidence that patients self-treat after unmet need supports a care-displacement risk model; it does not prove that a particular NHS refusal caused a particular illicit purchase.

Referencing

Documentary sources are referenced in ISO 690:2021 author-date style. UK legal cases use standard neutral citations and legislation is cited conventionally. Online sources were accessed 28 September 2026 unless otherwise stated.

2. Cannabis in context: ancient plant, modern control

Cannabis is an herbaceous flowering plant in the Cannabaceae family, closely related to hops (*Humulus*). A 2026 genomic study estimated that the cannabis and hop ancestral lineages began diverging approximately 33.9-41.4 million years ago. This does not mean modern cannabis was itself a tree; Cannabaceae contains woody and herbaceous members. Archaeogenomic work places human domestication of Cannabis in East Asia in the early Neolithic, with an association stretching back roughly twelve millennia (Ren et al., 2021; Nature Communications, 2026).

The historical depth matters only in a limited sense. Age does not establish safety or a right to medical efficacy; many natural substances are dangerous. It does establish that contemporary criminal prohibition is a very recent governance choice compared with the human-plant relationship. A serious policy analysis should therefore evaluate present harms and benefits rather than rely on the assumption that illegality itself demonstrates medical worthlessness.

In the UK, cannabis remains Class B for unauthorised possession and supply. In 2018, however, qualifying cannabis-based products for medicinal use in humans were moved into Schedule 2, creating a lawful prescribing route. The Government's own circular states that the Chief Medical Officer found conclusive therapeutic evidence for certain conditions and reasonable evidence for several others, while ACMD recommended that cannabis-derived medicinal products of appropriate standard be moved out of Schedule 1 (Home Office, 2018).

3. THC, CBD, dronabinol, nabilone and Spice are not the same thing

A recurring source of confusion in drug policy is the word “cannabinoid”. It describes a pharmacological relationship, not one uniform substance. Natural plant cannabinoids, pharmaceutical synthetic THC, THC analogues and illicit synthetic cannabinoid receptor agonists can have radically different risk profiles.

Substance / group	What it is	UK medical/legal significance	Key distinction
Δ^9 -THC	Primary intoxicating cannabinoid naturally produced by cannabis. Partial agonist at CB1/CB2 receptors.	Present in Schedule 2 CBPMs; also in licensed THC:CBD spray.	Natural THC can impair, intoxicate and provoke anxiety/psychotic-like symptoms at sufficient exposure, but it is pharmacologically different from many SCRA.
CBD	Cannabidiol, non-intoxicating at ordinary therapeutic doses.	Licensed purified CBD is used for defined severe epilepsies.	Does not reproduce the typical THC “high”; effects and interactions are dose- and indication-specific.
Dronabinol	Manufactured Δ^9 -THC.	Class B, Schedule 2; not a UK licensed medicine.	Chemically Δ^9 -THC, not “Spice”.
Nabilone	Synthetic THC-related cannabinoid medicine.	Licensed in the UK for refractory chemotherapy-induced nausea/vomiting; Schedule 2.	THC analogue; not street SCRA/Spice.
Spice / SCRA	Large group of synthetic cannabinoid receptor agonists, often chemically unlike THC; many are high-efficacy/full agonists.	Many are Class B and Schedule 1; no recognised medicinal use for controlled street SCRA.	Can produce substantially more severe and unpredictable toxicity than cannabis.

How Spice products entered the market

Historically, many commercial “Spice” products were made by applying a laboratory-manufactured SCRA to otherwise non-intoxicating herbal material. The active chemical could be dissolved, distributed over a carrier

and allowed to dry. Modern SCRAAs are also found on paper, in vape liquids, powders and other forms. The carrier is not what makes the product “Spice”; the synthetic receptor agonist is. Importantly, early UK Spice mixtures were sold openly in the legal-high/head-shop market before successive controls were introduced (ACMD, 2020).

Why the pharmacology matters

THC is generally described as a partial agonist at CB1 receptors. Many SCRAAs have much higher efficacy at CB1 and may act as full agonists. Combined with uncertain dose, uneven application and rapidly changing molecular identity, this helps explain reports of severe agitation, delirium, seizures, cardiovascular toxicity, unconsciousness and acute psychiatric disturbance. “Synthetic cannabis” is therefore a potentially misleading label: many SCRAAs are not synthetic THC and should not be treated as if they were merely stronger versions of the plant.

4. What cannabis and cannabinoids are medically evidenced to do

No single sentence such as “cannabis works” or “cannabis does not work” is scientifically adequate. Evidence depends on the cannabinoid, formulation, dose, route, condition and outcome. Much of the strongest evidence concerns purified or standardised cannabinoid products rather than smoked or unstandardised whole-plant material.

Condition / purpose	Product studied	Evidence grade	Evidence summary
Severe treatment-resistant epilepsy: Dravet syndrome	CBD + clobazam	Established / guideline-supported	NICE recommends cannabidiol with clobazam from age 2, with continuation linked to seizure reduction.
Severe treatment-resistant epilepsy: Lennox-Gastaut syndrome	CBD + clobazam	Established / guideline-supported	NICE recommends with response monitoring; RCTs demonstrate reduction in relevant seizure frequency.
Tuberous sclerosis complex seizures	Purified CBD	Established / guideline-supported	NICE TA873 supports add-on CBD in qualifying patients with response monitoring.
Multiple-sclerosis spasticity	THC:CBD oromucosal spray (nabiximols)	Established / guideline-supported	NICE offers a 4-week responder trial after failure of other pharmacological treatment; systematic reviews show improved patient-reported spasticity response.
Chemotherapy-induced nausea/vomiting refractory to standard antiemetics	Nabilone; dronabinol in some international guidance; standardised THC/CBD evidence	Established / conditional	NICE: consider nabilone as add-on in adults with persistent CINV. ASCO 2024 supports cannabinoids for refractory CINV, not as cancer treatment.
Chronic pain, especially neuropathic pain	Comparable THC:CBD extract; high-THC products	Supported but modest / conditional	AHRQ 2024: small short-term pain improvements for some products, with increased dizziness, sedation and nausea; evidence for whole-plant cannabis remains insufficient. NICE does not recommend these products for routine adult chronic pain.
Sleep disturbance / insomnia symptoms	Various THC/CBD preparations	Limited / emerging	Recent RCT syntheses report improvement in subjective sleep measures, but substantial heterogeneity and little consistent objective sleep-architecture evidence.
HIV/AIDS appetite and weight loss	Dronabinol / cannabinoids	Limited / older evidence	Older trials and NASEM found limited evidence for appetite/weight outcomes; modern antiretroviral care changes current relevance.
Tourette syndrome / tics	THC or THC/CBD	Limited / emerging	Small trials and reviews suggest possible benefit but evidence remains too small/uncertain for broad routine claims.
Crohn disease symptoms	Cannabis/cannabinoids	Limited / emerging	Small studies suggest symptomatic/clinical activity

Condition / purpose	Product studied	Evidence grade	Evidence summary
			improvement in some Crohn populations; evidence is insufficient for maintenance or objective inflammatory control.
Cannabis use disorder / withdrawal	CBD or cannabinoid combinations	Limited / emerging	Recent psychiatric review reports low-quality signals for some outcomes; not established standard treatment.
Autism-related symptoms	CBD-rich/cannabinoid products	Limited / emerging	Small heterogeneous studies; insufficient for routine treatment claims.
Anxiety disorders	CBD/cannabis	Insufficient / conflicting	People commonly self-medicate, but a 2026 systematic review of randomised trials found no significant evidence supporting cannabinoids for anxiety disorders overall.
PTSD	Cannabinoids	Insufficient / conflicting	Current controlled evidence does not support routine efficacy; previous tiny studies were insufficient.
Depression	Cannabis/cannabinoids	Insufficient	No convincing RCT evidence for routine cannabinoid treatment of depressive disorders; observational relationships may include harm as well as perceived relief.
Schizophrenia / psychotic disorders	CBD investigated; THC generally risk-relevant	Not established; THC caution	THC can induce psychotic-like symptoms and cannabis exposure is associated with psychosis risk/relapse in susceptible people. CBD remains investigational rather than routine antipsychotic treatment.
Cancer itself	Cannabis/cannabinoids	Not supported as cancer treatment	ASCO recommends against using cannabis/cannabinoids instead of evidence-based cancer-directed treatment outside trials.
Cancer pain/cachexia/appetite	Cannabis/cannabinoids	Insufficient / condition-specific	Evidence does not justify broad claims; CINV is the clearest oncology indication.
Glaucoma	Cannabinoids	Not recommended / impractical	Transient intraocular-pressure effects do not make cannabis an effective long-term glaucoma treatment; cardiovascular/psychoactive effects and short duration limit utility.
Parkinson disease, Huntington disease, dystonia, ALS	Cannabinoids	Insufficient	Trials are small or inconsistent; no robust basis for routine disease-specific treatment.
Irritable bowel syndrome	Cannabinoids	Insufficient	Mechanistic interest exists, but reliable therapeutic evidence is inadequate.

4.1 Established UK uses

NICE NG144 provides the clearest current NHS benchmark. It recommends cannabidiol-based treatments for specific severe epilepsies, a responder trial of THC:CBD spray for moderate-to-severe MS spasticity after other treatment failure, and consideration of nabilone for chemotherapy-induced nausea/vomiting persisting despite optimised conventional antiemetics. Those recommendations alone establish that cannabinoid pharmacology is already part of ordinary evidence-based medicine in selected circumstances (NICE, 2019-2023).

4.2 Chronic pain: a genuine signal, but not a miracle

The 2024 AHRQ living systematic review included 26 RCTs (N=2,315) and 12 observational studies (N=48,468). In mainly neuropathic chronic pain, extracted products with comparable THC:CBD ratios produced small average short-term improvements in pain and function; high-THC products may also produce small improvements. Dizziness, sedation and nausea were more common. Evidence for whole-plant cannabis, opioid-sparing effects

and several important long-term harms remained insufficient (AHRQ, 2024). This is a strong argument for better standardised trials, not for claiming that every chronic-pain patient will benefit.

NICE's present recommendation not to offer THC, dronabinol, nabilone or THC:CBD combinations for chronic pain in adults reflects the committee's assessment of evidence and cost effectiveness at population level. It is not equivalent to a statutory finding that cannabinoids have no analgesic effect. The distinction between clinical evidence, commissioning and law is central to the earlier Law and Policy in Medicine framework.

4.3 Mental health: self-medication is common, efficacy is not established

A 2026 systematic review in *The Lancet Psychiatry* synthesised 54 randomised trials involving 2,477 participants across mental health and substance-use disorders. It did not find significant overall benefit for anxiety disorders, PTSD, psychotic disorders or opioid-use disorder; no eligible randomised trials supported cannabinoids for depression. Low-quality signals existed for some other conditions. This is an important corrective to a simplistic medicalisation of every reported reason for cannabis use: people may genuinely experience relief, but population-level therapeutic efficacy requires separate evidence.

4.4 Social and subjective effects are health-relevant without automatically becoming diagnoses

Relaxation, pleasure, laughter, altered sensory experience, appetite, reduced salience of worry and social bonding are common reasons people seek THC. Those experiences are not automatically diseases requiring treatment, but wellbeing is not limited to disease eradication. A rights-based regulatory model can acknowledge adult pleasure and social use without pretending that recreational use is a medical prescription. The NHS role proposed here is therefore partly medicinal and partly public-health stewardship: safe supply, information, monitoring and a route into care when problems emerge.

5. What people actually use cannabis for

The European Web Survey on Drugs provides a useful empirical answer to the question “what is the person trying to achieve?” Among 33,718 respondents reporting herbal-cannabis use, motives crossed medical, emotional, social and recreational categories. Multiple motives can coexist in one person.

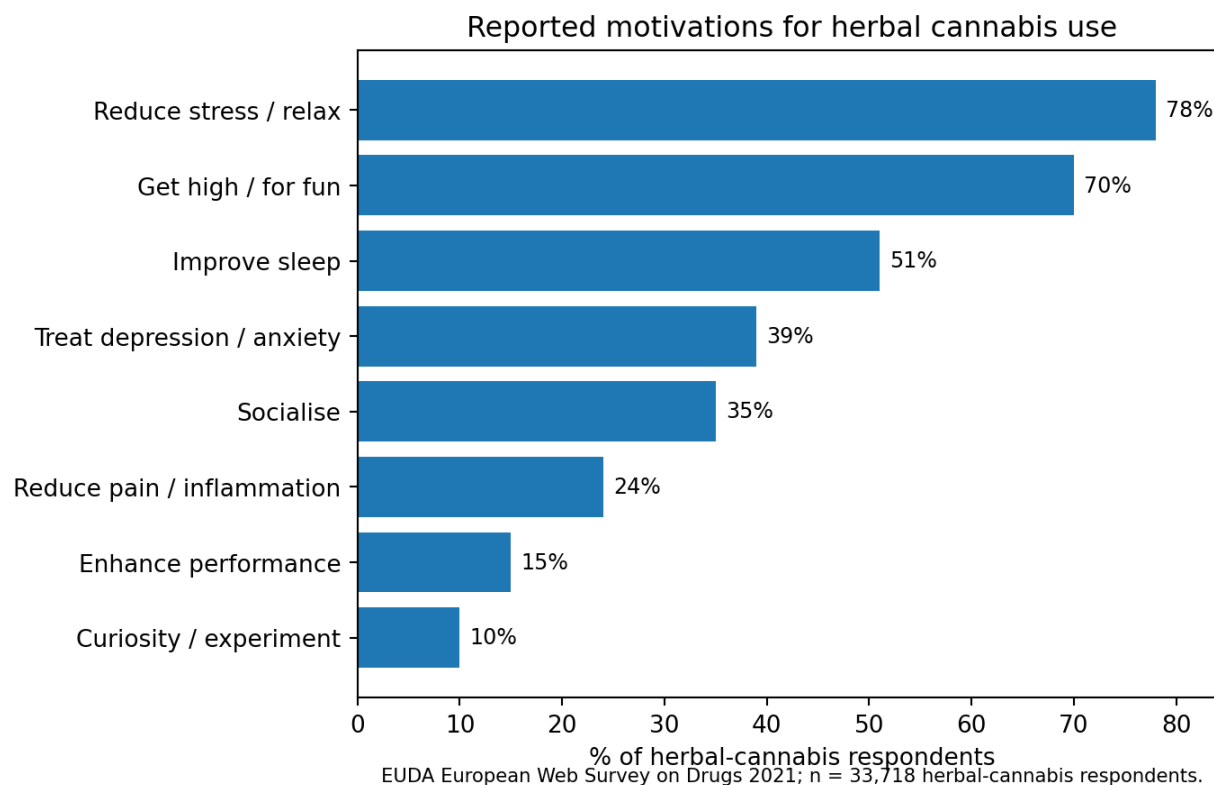


Figure 1. Reported motivations for herbal cannabis use in the European Web Survey on Drugs 2021 (EUDA, 2022).

The result undermines a rigid binary between “medical user” and “recreational user”. A person may use the same product because pain is lower, sleep is easier, social interaction is more comfortable and the experience is pleasurable. Clinical practice still needs to ask whether a symptom has another cause, whether cannabis is helping objectively and whether harms are emerging. But treating disclosure as a moral confession rather than clinically relevant information damages the quality of that assessment.

6. Current UK law, NHS access and the care-displacement problem

The UK changed the legal position in November 2018. Qualifying CBPMs moved to Schedule 2 and can be supplied through defined medical routes. Cannabis outside that definition remains controlled, and cultivation without appropriate authority remains unlawful. For unlicensed CBPMs, NHS England states that supply must be under the prescription or direction of a clinician on the GMC Specialist Register. A GP may legally continue prescribing in appropriate circumstances, but NHS England advises specialist initiation and highlights commissioning/shared-care constraints (Home Office, 2018; NHS England, 2026).

The result is an access paradox. A substance can be legally recognised as medicine while routine NHS access remains narrow. Private clinics can lawfully prescribe in a broader range of specialist circumstances, leaving some patients with a choice between private expense, continued symptoms, or unregulated self-treatment. NHS England’s 2019 review recorded barriers involving evidence, clinician confidence, commissioning and cost, along with families who had moved into private prescribing and reported substantial financial burden.

A 2024 UK cross-sectional study of 10,965 adults estimated that approximately 1.77 million adults were using illicit cannabis to self-treat diagnosed health conditions. The study cannot prove that NHS restriction caused that behaviour, and one author reported a Curaleaf affiliation. It nevertheless establishes a large population in which symptom management is occurring outside standard clinical visibility (Erridge, Troup and Sodergren, 2024).

Care displacement model

Route after unresolved need	Potential benefit	Principal risks / costs
Regulated NHS treatment	Clinical oversight, integrated record, regulated supply, equality of access.	May be unavailable, slow or limited by evidence/commissioning.
Regulated private treatment	Lawful access and some clinical oversight.	Cost, fragmented records, commercial incentives, unequal access.
Illicit/self-supplied cannabis	Immediate access, user control.	Unknown potency/composition, contaminants/adulterants, no mandatory interaction review, legal risk.
No treatment	Avoids medicine adverse effects.	Continuing pain/distress, loss of function, delayed diagnosis, loss of trust.

The proposed NHS model is designed to reduce the distance between the first and third rows: if a person is already using cannabis, clinicians should be able to know what they are taking, discuss risks and alternatives, and where clinically appropriate substitute a known product for an unknown one.

7. Product quality: regulated medical cannabis versus the illicit market

The central product-safety difference between a regulated medicine and an illicit product is not that regulated manufacturing never fails. It is that specifications, testing, traceability, recall and accountability exist.

7.1 What has been found in illicit cannabis

Adulterant / contaminant	Documented issue	Risk relevance
Glass / “grit” particles	UK “grit weed” reports and health warnings in the mid-2000s.	Weight/appearance manipulation; inhaled particulate injury.
Sand / mineral grit	Reported in adulterated cannabis.	Adds weight; inhaled particles.
Lead	Mass lead-poisoning outbreak linked to adulterated cannabis in Leipzig.	Systemic neurotoxicity, anaemia, renal and neurological harm.
Talc / silicates / aluminium	Reported in case or forensic literature.	Respiratory particulate exposure.
Rosin / colophony	Forensically identified in hashish.	Irritant fumes and adulteration.
Textile fibres / plastic / tape / plant debris	Found in forensic examinations of street hashish.	Foreign material; may reflect deliberate bulking or poor handling.
Mould / bacteria	Microbiological contamination occurs in poorly controlled plant products.	Respiratory/infectious risk, especially for vulnerable patients.
SCRAs / “Spice”	WEDINOS analysis found SCRAs in 435/1,635 submitted cannabis-related samples.	Unexpected high-efficacy cannabinoid exposure; severe toxicity can differ markedly from THC.
Other psychoactive compounds	WEDINOS submissions included small numbers containing cocaine, opiates or ketamine.	Unexpected drug interactions and diagnostic uncertainty.

Selection-bias warning

The WEDINOS figures must not be interpreted as “26.6% of all UK cannabis contains Spice”. WEDINOS submissions are voluntary and often occur because a product is suspected to be unusual. The finding proves adulteration occurs; it does not provide a representative national prevalence estimate (WEDINOS analysis, 2025).

7.2 What has gone wrong in prescribed UK cannabis

Year	Product	Regulatory defect	What the regulated system could do
2021	NOIDECS T20/C4 cannabis flower	Two batches recalled because they might be contaminated with mould.	Identify affected batches, stop supply, quarantine stock and contact patients/pharmacies.
2023	Canopy AKH 22 dried cannabis	Two batches exceeded specified total aerobic microbial count.	Full onward traceability; recall affected lots.
2026	Curaleaf THC/CBD oil	Three batches recalled after stability testing found THC below	Recall at wholesaler/pharmacy level; identify exact lots.

Year	Product	Regulatory defect	What the regulated system could do
		specification.	

No confirmed UK prescribed-cannabis case was located in this review involving deliberate weighting with glass/sand/lead or deliberate SCRA/Spice adulteration. That is reassuring, but absence of a reported event is not the same as proof that every batch has undergone a broad SCRA screen.

7.3 The SCRA testing gap

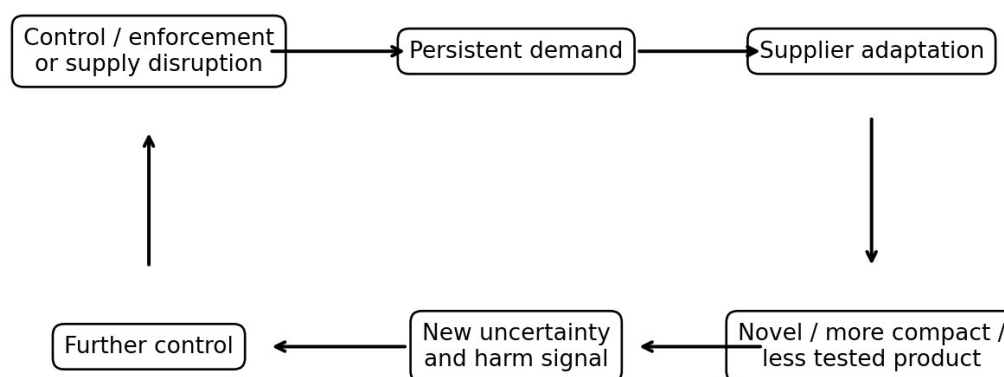
The European Pharmacopoeia Cannabis Flower monograph was incorporated into the British Pharmacopoeia in 2024. Pharmaceutical cannabis quality control covers identity, cannabinoid assay and relevant impurity/contaminant specifications. However, a test designed to quantify THC and CBD does not automatically establish the absence of every synthetic cannabinoid receptor agonist. SCRA can be identified with appropriate chromatographic/mass-spectrometric methods such as LC-MS/MS or high-resolution mass spectrometry, but this review did not locate a public UK requirement that every medicinal-cannabis batch undergo a universal broad SCRA panel.

The proposed NHS specification therefore adds an explicit requirement: ****SCRA screen - none detected within validated analytical scope****, with the panel updated as new compounds emerge. This does not make adulteration impossible; it makes the analytical question explicit and auditable.

8. Prohibition, designer drugs and the substitution cycle

A central hypothesis of this paper is that prohibition can sometimes select for market features that are undesirable from a health perspective: high potency per unit mass, chemical novelty, concealability and rapid replacement. This is not a universal law. It is a mechanism to be tested against specific histories.

Prohibition-induced substitution: testable mechanism



A recurring market mechanism - not a universal law and not proof that every later drug was caused by the earlier ban.

Figure 2. A testable substitution cycle. The arrows indicate a possible market mechanism, not an assertion that every control event causes the next drug.

8.1 The strongest UK example: synthetic cannabinoids

The UK SCRA record is unusually explicit. First-generation synthetic cannabinoids were controlled in 2009. ACMD subsequently recorded gaps in those definitions being exploited, followed by second-generation compounds and further controls in 2013; harmful compounds outside the second-generation definition then appeared, contributing to further generic controls. The Psychoactive Substances Act 2016 attacked the wider “legal high” retail model. The Government’s review found that visible head-shop supply reduced substantially, while some NPS supply - particularly Spice - moved into covert or street channels. This is direct evidence of regulatory evasion and market adaptation, even though it does not prove that prohibition was the only driver of harm.

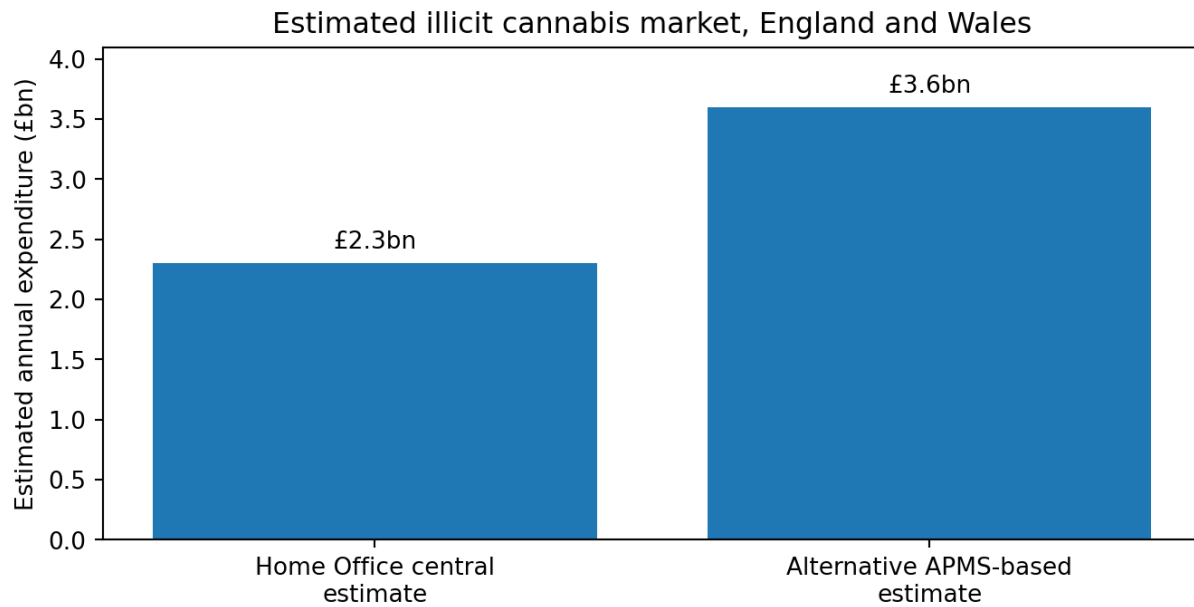
8.2 Decade map: UK and USA

Decade	United Kingdom	United States
1960s	Cannabis, LSD, amphetamines and heroin present. 1967 legislation tightened heroin/cocaine prescribing; later heroin epidemic also reflected new international supply. Causal replacement not established.	Marijuana, LSD, heroin, prescription stimulants/depressants. Federal controls tightened; heroin epidemic expanded. No simple A→B causal chain.
1970s	Misuse of Drugs Act framework. 1977 generic chemical definitions were introduced partly to catch molecular variants rather than named compounds only.	Controlled Substances Act 1970. Designer fentanyl analogues appear by late decade as heroin substitutes; analogue-control problem becomes visible.
1980s	Heroin epidemic, cannabis, amphetamine, cocaine and MDMA/rave market. Diversification more than one-for-one substitution.	Crack/cocaine, heroin and clandestine designer drugs. Fentanyl analogues and 1986 analogue legislation illustrate chemical evasion.
1990s	Heroin, cannabis, amphetamine, ecstasy and rising cocaine. No single prohibition-driven replacement established.	Prescription opioid expansion begins; this is primarily a medical/commercial supply phenomenon rather than prohibition.
2000s	Commercial “legal high” market expands: Spice/SCRAs, piperazines, cathinones, mephedrone. Products exploit controlled/uncontrolled boundary.	Meth precursor restrictions reduce domestic labs; production shifts and Mexican producers adopt alternative precursor/P2P routes - a well-documented supply adaptation.
2010s	SCRA generations and generic controls; Psychoactive Substances Act closes head shops but some market moves to street/covert supply.	Prescription-opioid interventions plus market changes are followed by heroin substitution in some studies and then rapid illicit fentanyl expansion from 2013. Causality is multi-factorial.
2020s	Nitazenes and other synthetic opioids enter heroin/counterfeit medicine supply; international scheduling continues to trigger monitoring for new analogues.	Fentanyl dominates illicit opioid mortality; xylazine/medetomidine and new synthetic opioids demonstrate continuing adulterant/substitution dynamics.

The key inference is limited but important: ****if demand persists, eliminating one molecule or supply route may not eliminate the desired effect.**** Suppliers can change chemistry, geography or product form. Public-health evaluation should therefore ask not only “did use of the prohibited product fall?” but also “what did users receive instead, and was it safer?”

9. Economics: the £2.3-£3.6 billion cannabis market

The Home Office’s 2026 estimate for England and Wales combines approximately 2.7 million cannabis users, around 205 million cannabis-use days, assumptions about consumption per use-day and a £10-per-gram retail price. The result is £2.3 billion annual expenditure. The Home Office states that survey under-reporting and missing cohorts mean this is likely an underestimate; substituting APMS data generates £3.6 billion (Home Office, 2026).



Source: Home Office (2026). The £2.3bn central estimate is acknowledged to be an underestimate.

Figure 3. Home Office central and alternative estimates for annual illicit cannabis expenditure in England and Wales.

These are market-expenditure estimates, not dealer profit, and they are not automatically NHS revenue. Any legal system must pay for cultivation, energy, staff, laboratories, premises, pharmacy/dispensing, governance, waste, insurance and administration. Some illegal supply would remain. The economically defensible question is therefore how much existing expenditure can be moved into a lawful supply chain, and what public revenue or avoided costs result.

9.1 Illustrative regulated-market scenarios

Underlying market estimate	Legal-market capture (illustrative)	Gross spend moved into legal channel	20% dedicated levy (illustrative)
£2.3bn	50%	£1.150bn	£0.230bn
£2.3bn	75%	£1.725bn	£0.345bn
£2.3bn	90%	£2.070bn	£0.414bn
£3.6bn	50%	£1.800bn	£0.360bn
£3.6bn	75%	£2.700bn	£0.540bn
£3.6bn	90%	£3.240bn	£0.648bn

These scenarios are arithmetic, not forecasts. A 20% dedicated levy is used only to show scale. VAT rules, excise design, NHS dispensing, producer margins, retail prices and public-health objectives would determine actual revenue. A high tax burden could itself preserve the illegal market by making legal supply uncompetitive. Canada's survey evidence suggests price and convenience are central to consumer source choice.

9.2 Potential fiscal channels

- Cannabis-specific excise or public-health levy.
- VAT or other applicable consumption taxation depending on supply model and medicine status.
- Corporation tax, PAYE/NIC and legitimate employment generated through cultivation, testing and distribution.
- Direct NHS dispensing income if a public/self-pay route were chosen for non-medical adult supply.
- Potential avoided or reduced costs in policing, courts, incarceration, emergency treatment and diagnostics associated with unknown products - these require dedicated modelling and must not be assumed.

- Investment of a defined share into mental health, pain services, addiction care, toxicology, independent trials and drug checking.

10. Case studies: Canada, NHS diamorphine and regulated displacement

10.1 Canada: legal supply can displace illegal purchasing

Canada does not prove that one regulatory model will transfer directly to the UK, but it provides a large-scale natural experiment. Health Canada reports that among people consuming cannabis, usual legal purchasing rose from 37% in 2019 to 72% in 2024, while illegal purchasing fell from 16% to 3%. In 2024 the most common factors influencing where cannabis was obtained were convenience (30%), price (23%) and safe supply (22%).

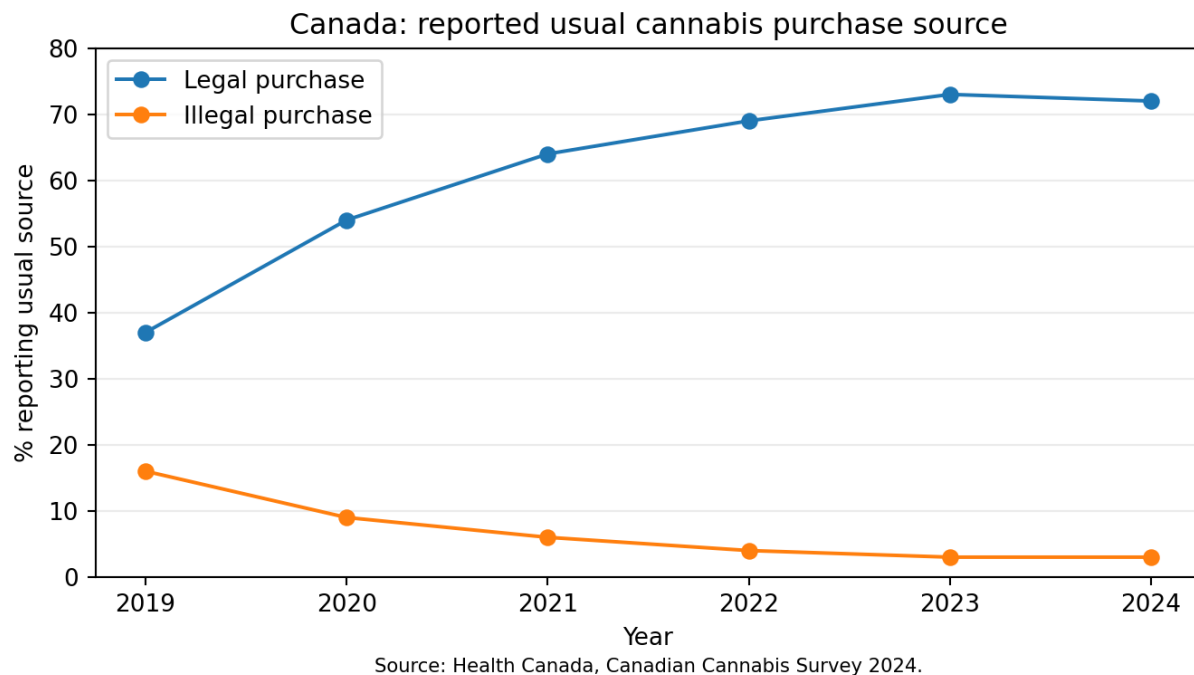


Figure 4. Canada: legal and illegal usual purchase sources, 2019-2024 (Health Canada, 2024).

The inference is not that illegal markets vanish after legalisation. The inference is that consumers can be moved toward regulated supply when it is easier, competitively priced and trusted. A UK NHS-centred model that is prohibitively expensive, slow or humiliating would fail that competitive test.

10.2 RIOTT: a UK example of known pharmaceutical supply reducing street supply

The Randomised Injectable Opiate Treatment Trial (RIOTT) is not a cannabis trial, but it demonstrates a broader public-health principle. In 127 chronic heroin-dependent patients who continued to inject street heroin despite conventional treatment, supervised injectable diamorphine produced substantially more participants meeting the trial's reduction-in-street-heroin outcome than optimised oral methadone (adjusted 66% versus 19%; injectable methadone 30%). The treatment occurred in NHS supervised clinics in England (Strang et al., 2010).

This does not justify supplying every drug without restriction. It demonstrates that, in at least one high-risk drug market, providing the pharmaceutical substance under clinical supervision can reduce use of an unknown street product. That finding supports testing the analogous proposition for a lower-overdose-risk product such as cannabis.

11. Commercialisation, private access and evidence incentives

The UK already has a private medicinal-cannabis market. Ownership is mixed rather than simply “American or Israeli”: major operations include US/North-American, Australian, German-linked and UK-based businesses. This matters because a legal medicine that is practically accessible only through private payment creates a two-tier route: public prohibition for many, commercial access for those who can pay.

Private provision is not inherently improper. The policy concern is structural: fragmented records, commercial incentives, uneven prices and a research base partly dependent on firms with an interest in market expansion. The answer is not to reject private evidence automatically; it is independent replication, conflict disclosure and an NHS/public research capability strong enough to test claims itself.

Ketamine provides a parallel incentive problem. Generic ketamine is an old, inexpensive drug with established anaesthetic use and substantial evidence for rapid antidepressant effects in specialist settings, but the commercial incentive to fund a full new indication can be weaker when patent protection is limited. Oxford Health NHS Foundation Trust has operated a self-pay ketamine service and states that income supports NHS care. This illustrates the broader question: who pays to generate licensing-grade evidence for old, generic or naturally occurring medicines when exclusivity is weak?

12. Risks, contraindications and the schizophrenia/psychosis distinction

Legalisation through healthcare is not equivalent to declaring cannabis harmless. A credible system must make adverse effects visible and must be willing to recommend against THC for some people or circumstances.

12.1 Schizophrenia is not synonymous with psychosis

Psychosis is a syndrome - hallucinations, delusions or loss of reality testing can occur in schizophrenia, bipolar disorder, severe mood disorders, intoxication, neurological illness, sleep deprivation and other states.

Schizophrenia is a specific disorder in which psychotic episodes may occur. This distinction matters because THC can produce transient psychotic-like symptoms even in people who do not have schizophrenia; a bad THC reaction is therefore not a diagnostic test for schizophrenia.

Experimental THC challenge studies show that THC can increase positive and negative psychotic-like symptoms in healthy volunteers. Deliberately administering THC to provoke an episode in a person suspected of schizophrenia would have poor specificity and could cause avoidable harm. It should not be proposed as routine diagnosis. Existing real-world reactions, however - especially reproducible paranoia, hallucinations or prolonged symptoms after cannabis - are clinically relevant history and should be recorded rather than dismissed as mere “drug misuse”.

A blanket lifetime ban on every cannabinoid for anyone with schizophrenia would also be pharmacologically crude. High-THC products present the clearest concern; CBD-dominant products have different pharmacology but remain investigational for psychotic disorders. Any use in this population should therefore occur only where a clinician with appropriate expertise judges the individual risk acceptable, with explicit monitoring and stopping criteria.

12.2 Other safeguards

- Age: adolescent exposure deserves stricter controls because brain development, dependence risk and educational impact differ from mature adult use.
- Pregnancy and breastfeeding: avoid routine cannabinoid exposure unless a specialist risk-benefit decision clearly justifies it.
- Driving and safety-critical work: impairment rules must remain enforceable; legal access is not permission to drive impaired.

- Cardiovascular disease: THC can increase heart rate and alter blood pressure; high-risk patients need individual assessment.
- Drug interactions: CBD and THC can interact with other medicines through pharmacodynamic and metabolic mechanisms; medication review remains necessary.
- Dependence: cannabis-use disorder exists. Treatment should be available without loss of dignity or automatic criminal consequences.
- Route of administration: smoking introduces combustion products. A health service should preferentially support vapourisation or oral/oromucosal formulations where appropriate while recognising differences in onset and dose control.

13. Proposal: four NHS reference cannabis products

The current private market often communicates through commercial cultivar or “strain” names. Those labels are poorly suited to an NHS formulary because they can drift across producers and do not reliably communicate pharmacology. The proposed alternative is four reproducible reference products selected and maintained to specification.

Reference product	Illustrative chemical specification	Purpose	Qualification
NHS-C1: THC dominant	Illustrative: THC 15-20%; CBD <1%	Conditions/individuals where THC-driven effects are clinically intended; highest psychiatric/impairment caution.	Not a final dose recommendation; MHRA/NICE trials set exact range.
NHS-C2: CBD dominant	Illustrative: CBD 10-15%; THC <1%	CBD-dominant therapeutic/research applications with minimal intoxication.	CBD still has interactions and dose-dependent adverse effects.
NHS-C3: Balanced	Illustrative: THC 8-12%; CBD 8-12%	Balanced THC/CBD response; analogous conceptually to 1:1 pharmaceutical products.	Allows direct comparative trials against C1/C2.
NHS-C4: Moderate balanced	Illustrative: THC 4-8%; CBD 4-8%	Lower-potency starting/reference option; potentially easier titration for some adults.	Exact specification requires clinical/pharmaceutical development.

The percentages above are policy-development examples, not clinical prescriptions. The central proposal is the four-class architecture. Exact cannabinoid ranges, minor-cannabinoid specifications and dose forms should be set through trials and regulatory science.

13.1 Cultivation and product rules

- Use stable, reproducible genetics or validated production methods rather than marketing-led strain proliferation.
- Organic-first or pesticide-minimising cultivation is desirable, but “organic” must never substitute for pharmaceutical testing: plants can still carry mould, mycotoxins, metals and environmental contaminants.
- Permit multiple licensed producers to manufacture to the same NHS reference specification, preventing dependence on one private company.
- Require representative batch sampling and independent laboratories separated from commercial sales incentives.
- Publish batch Certificates of Analysis in a patient-readable format and retain machine-readable records for pharmacovigilance.
- Explicitly include broad SCRA/NPS screening using validated mass-spectrometric methods, updated as new synthetic cannabinoids emerge.
- Keep a research/exception pathway for rare conditions or formulations outside the four-product routine formulary.

13.2 Proposed minimum batch certificate

Field	Requirement
Identity	Confirmed Cannabis material / validated formulation identity.
THC / THCA	Quantified with validated method; within product specification.
CBD / CBDA	Quantified with validated method; within product specification.
Minor cannabinoids	Defined panel where clinically/research relevant (e.g., CBG, CBC, CBN).
Microbiology	Pharmacopoeial inhalation/oral limits as applicable.
Mould / mycotoxins	Within defined limits; no unacceptable fungal contamination.
Pesticides / growth regulators	Within pharmaceutical limits; prohibited agents absent.
Heavy metals	Lead, cadmium, mercury, arsenic etc. below limits.
Foreign material	No glass, grit, fibres, plastic or other unacceptable foreign matter.
SCRA / NPS screen	No synthetic cannabinoid receptor agonist detected within validated scope; current panel/version stated.
Batch traceability	Grow lot, processing lot, laboratory, date, distribution chain, recall contact.

14. Proposed clinical, confidentiality and monitoring pathway

The proposal is not “GPs hand out cannabis without assessment”. It is a move from specialist-gated unlicensed prescribing toward a small, licensed/formulary system in which appropriately trained GPs can initiate or continue standard products within competence, with clear specialist escalation.

14.1 Consultation model

- Ask what outcome the person is seeking: pain relief, sleep, nausea control, spasticity relief, appetite, relaxation, social/recreational effect, or several at once.
- Record current cannabis use without judgement: product type, route, approximate dose/strength, frequency, perceived benefits, unwanted effects and source reliability.
- Review diagnoses, previous treatments, interactions and contraindications rather than treating cannabis disclosure as proof of non-compliance.
- Where the use is recreational rather than medical, provide risk information and safer-product access without inventing a diagnosis.
- Where a clinical indication exists, choose among standard products, use a defined trial period and record patient-reported and objective outcomes where possible.
- Escalate psychosis-spectrum, complex cardiovascular, pregnancy, severe dependence or uncertain diagnostic cases to appropriate specialists.
- Use the NHS medicinal-cannabis registry or successor system for longitudinal outcomes and Yellow Card reporting for suspected adverse reactions.

14.2 Confidentiality and non-enforcement

The clinical value of the model depends on honesty. If a patient believes that telling a GP about drug use will routinely trigger police action, they have an incentive to conceal information that may be essential to diagnosis and interaction safety. Existing GMC confidentiality principles already recognise that patients must be able to trust doctors with sensitive information, subject to legal duties, court orders and exceptional public-interest disclosures. The proposed system should explicitly separate health records used for care from routine criminal enforcement.

Population surveillance can still be strong without identifying individuals. Laboratories can report anonymised trends in potency, contamination, SCRA, geographic clusters and adverse events. Public-health intelligence needs “what is circulating?” far more often than it needs “which named adult consumed it?”

14.3 Home-grown cannabis

Home cultivation is analytically different from commercial NHS supply because mandatory batch testing is impractical for every gardener. If home cultivation were separately legalised, a harm-reduction model could offer low-cost voluntary testing and clear cultivation safety guidance. Commercial and NHS-supplied cannabis should nevertheless meet mandatory standards because regulators have the power to impose them on sellers.

15. Counterarguments, uncertainties and safeguards

Counterargument	Assessment	Safeguard / test
Legalisation could increase use	Possible. Availability and normalisation can increase use in some populations.	Measure prevalence by age; restrict youth access; no lifestyle advertising; adjust retail density/price if harms rise.
High-THC products can worsen psychiatric risk	Supported for susceptible users; risk is dose/potency dependent.	Potency tiers, warning labels, GP screening, avoid/limit THC in high-risk patients, rapid specialist access.
Cannabis can cause dependence	Yes. Risk is not zero.	Routine screening, non-punitive treatment, dose review, taper/support when requested.
Driving risk may increase	Cannabis can impair driving.	Retain and enforce impairment rules; clear waiting/safety advice; study collision rates.
NHS should not become a recreational-drug retailer	A legitimate governance objection.	Separate medical prescribing from an adult regulated/public-health supply arm if needed; keep clinical care non-coercive.
The black market will undercut taxes	Likely if legal price is high or access inconvenient.	Price monitoring, modest tax, quality advantage, legal convenience, enforcement focused on unsafe/unlicensed commercial supply.
Evidence for many conditions is weak	Correct.	Four-product formulary enables better RCTs and registry evidence; do not advertise unproven indications.
A universal SCRA screen cannot detect every future molecule	Correct.	Use broad high-resolution methods, versioned libraries, non-targeted alerts and rapid panel updates; no test provides absolute zero-risk proof.
Organic-only rules may reduce supply or increase cost	Possible.	Use an “organic-first / low-pesticide” target while making validated safety specifications mandatory.
Cannabis revenue should not create NHS dependence on consumption	Important conflict risk.	Ring-fence only a capped health levy; do not set sales-growth targets; prohibit promotional incentives; publish independent governance.

16. Implementation and research programme

A staged programme can test the model without pretending uncertainty has disappeared.

Phase	Action
Phase 1 - Specification	MHRA/NICE/NHS pharmacy group defines four reference products, laboratory methods, SCRA panel, packaging and adverse-event standards. Commission independent baseline study of illicit market price/potency/adulteration.
Phase 2 - Pilot regions	Allow trained participating GPs and pharmacies to use the four products under protocol. Include adults already self-supplying cannabis and conventional clinical cohorts. Protect confidentiality.
Phase 3 - Comparative evidence	Run pragmatic trials and registry analyses by indication and user goal. Compare products C1-C4, dose, route, quality of life, function, sleep, pain, adverse effects and discontinuation.
Phase 4 - Market displacement	Measure legal versus illegal purchasing, prices, police cannabis workload, confiscations, WEDINOS composition, emergency presentations and organised-crime indicators.
Phase 5 - Economic evaluation	Publish NHS costs, tax/levy receipts, testing costs, enforcement changes, hospital/diagnostic costs and QALY/cost-effectiveness analyses. Separate gross sales from public revenue.

Phase	Action
Phase 6 - Independent review	Independent academic/public-health review at 2, 5 and 10 years with authority to tighten, expand or terminate parts of the model.

Priority research questions

- Does legal NHS/public supply reduce the proportion of users buying cannabis from illegal suppliers?
- Does explicit SCRA screening reduce unexpected synthetic-cannabinoid exposure compared with illicit supply?
- What are the comparative outcomes of THC-dominant, CBD-dominant, balanced and moderate-balanced products by condition?
- Does integration into primary-care records reduce duplicated diagnostics, adverse drug interactions or emergency presentations?
- Which populations experience worsening anxiety, psychotic symptoms, dependence or functional impairment, and what early-warning markers predict this?
- What legal price and access conditions are necessary to outcompete illegal cannabis without encouraging unnecessary consumption?
- How much public revenue is generated after all production, testing, dispensing and governance costs, and where should it be spent?
- How do youth use, road collisions and workplace injuries change under the model?
- How many people currently using cannabis for symptoms transition to other diagnoses/treatments after a non-judgemental clinical review?
- Does standardising to four products materially improve the quality and comparability of clinical evidence?

17. Conclusions

Cannabis policy is often discussed as though society must choose between two caricatures: prohibition or a commercial free-for-all. The evidence supports a much more specific question. Can a regulated health-centred supply system produce safer products, better clinical information, less criminal-market revenue and better evidence than the present combination of narrow NHS access, private prescribing and illicit supply?

The UK already accepts cannabinoid medicine in law and in NICE guidance for several defined indications. The strongest expansion case is therefore not ideological. It is regulatory: standardise the product, test it properly, collect outcomes and let the evidence determine where use is useful, neutral or harmful. The four-reference-product proposal is designed to make that possible without importing the confusing commercial “strain” culture into the NHS.

The illicit market exposes users to uncertain potency, foreign material, microbes and - in documented submitted samples - synthetic cannabinoids. Prohibition has also repeatedly encountered chemically adaptive markets. The regulated medical market has had quality failures of its own, but the difference is traceability: affected batches can be identified, recalled and investigated. The appropriate response to imperfect regulation is better regulation, not an assumption that unregulated supply is safer.

The economic case remains a hypothesis to test, not a guaranteed windfall. England and Wales already contain an estimated £2.3 billion annual cannabis market, with an alternative Home Office methodology producing £3.6 billion. Redirecting even part of that expenditure into legal production would not make all of it NHS income, but it could create taxable legitimate activity and reduce the revenue available to criminal suppliers. The public-health model should be designed to compete on the factors consumers themselves report mattering: convenience, price and safe supply.

Finally, the paper rejects both stigma and romanticisation. Cannabis can help in some clinical circumstances, may help modestly in others, and is unproven or risky in still others. Adults can also seek it for pleasure or social reasons. A mature health system does not need to approve of every choice in order to reduce harm. It needs accurate products, honest information, confidential clinical relationships, proportionate safeguards and a willingness to revise policy when measured outcomes contradict expectations.

Proposed policy principle

Replace an unknown cannabis market with a known one: four standard products, independent testing, explicit SCRA screening, competitive legal pricing, informed adult choice, GP-accessible clinical oversight, specialist safeguards where risk is high, and continuous public reporting of outcomes.

Appendix A. Evidence matrix - interpretation notes

The medical evidence table in section 4 deliberately combines licensed medicines, purified cannabinoids and extracted cannabis products while identifying the product studied. This prevents evidence for one formulation being silently transferred to another. For example, evidence for purified CBD in Dravet syndrome does not prove that smoked high-THC flower treats epilepsy; evidence for nabiximols in MS spasticity does not prove all cannabis products have the same effect.

Appendix B. Financial scenario mathematics

For a base illicit-market estimate M , assumed regulated-market capture c and dedicated public-health levy l , illustrative levy revenue is $M \times c \times l$. The calculation does not include VAT, corporation tax, payroll taxes, production costs, behavioural price elasticity, administration, displacement to home cultivation, or continued illegal supply. It is therefore a scale illustration only.

Appendix C. Suggested minimum data fields for an NHS cannabis registry

Domain	Fields
Patient / consent	Age band, sex where clinically relevant, consent/opt-out, vulnerability flags; avoid unnecessary law-enforcement identifiers.
Clinical goal	Diagnosis where applicable; symptom/functional goal; recreational/social goal may be recorded separately without medicalising it.
Product	Reference product C1-C4; batch; THC/CBD profile; route; dose/frequency.
Baseline	Pain/function/sleep/spasticity/seizure or relevant validated outcome; other medicines; alcohol/tobacco/other drug use where clinically relevant.
Outcome	Benefit, adverse effects, discontinuation, dose change, quality of life, healthcare utilisation.
Safety	Psychiatric symptoms, cardiovascular effects, dependence indicators, driving/work incidents, pregnancy where relevant.
Supply displacement	Previous source, current legal/illegal purchasing mix, reason for source choice (price/convenience/safety).
Laboratory	Potency, contaminants, SCRA panel version, failures/recalls.

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Source note on prior research

This paper incorporates and updates relevant analytical frameworks from the previously prepared research documents From Punishment to Care (25 August 2026) and Law and Policy in Medicine - Evidence Paper v1 (27 September 2026), including the concepts of care displacement, policy-versus-law classification, adult autonomy, risk-based regulation and non-destructive verification. Current public sources were rechecked for this paper where material facts had changed, particularly the September 2026 Home Office market estimate and March 2026 MHRA recall.