Strengthening Cannabinoid Research & Development: Controlled Drugs Licensing Reforms for UK Medical and Scientific Research in Academia and Industry

Professor Trevor Jones CBE FMedSci
Zack Bellman

Cannabinoid
Research &
Development
Group UK

Section 1: Current Landscape for Cannabinoid Research & Development in the UK

Introduction

The United Kingdom is a global leader in life sciences and medical innovation, particularly in the cannabinoid sector. One prominent example is GW Pharmaceuticals, a UK-based company founded in 1998, which developed two key medicines: Epidiolex and Sativex. In 2021, GW Pharmaceuticals was acquired by US-based Jazz Pharmaceuticals for $7.1 billion[1].

A growing number of innovative UK startups in the biotech and pharmaceutical sectors are developing medicines based on well-characterised components of cannabis or targeting the endocannabinoid system using novel synthetic molecules. These companies have the potential to develop treatments for unmet medical needs and replicate GW's success. However, the current regulatory framework governing cannabinoid use, production, possession, and distribution in the UK remains restrictive, limiting research progress.

In 2018, medical cannabis was reclassified from Schedule 1 to Schedule 2 to open up medical access for patients and facilitate clinical research. Unfortunately, this promise has not yet materialised, and barriers to research remain. With a new government administration in the UK, there is an opportunity for further regulatory reform and improvements to licensing policies for cannabinoid Research & Development (R&D). Despite parliamentary debates in 2023, these changes have yet to be realised[2].

> *"Five years later, it is totally unacceptable that so little progress has been made. It would be helpful if the Minister could set out what steps he is taking to empower and accelerate research in this space. I hope he will not dodge the question by saying that the issue is simply one for clinicians. The Government has a responsibility—the Minister is nodding, and we await his reply with interest, but there seems to be a lack of urgency on the issue, which is concerning. People are suffering right now. We have heard again this afternoon about children who are fitting 100 times or more. Accessing care is, in some cases, pushing families to the brink of destitution. We should do everything we can to support those people.*
>
> *If research is needed before clinicians feel comfortable prescribing, then it is incumbent on the Government to support clinicians. We need more streamlined clinical trials and better engagement with clinicians. We do not want to be back here in another two years having a rerun of this debate…"*
>
> **Karin Smyth, Labour MP, Minister of State for Secondary Care (quote from parliamentary debate 'Medicinal Cannabis: Economic Contribution' April 20, 2023)[2].**

This paper advocates for reforms to the licensing process to foster the medical cannabinoid research sector in the UK. Despite a strong research ecosystem, delays and complications in the requirements for obtaining and renewing Home Office licences have become significant obstacles for academics, universities, and companies working on novel cannabinoid treatments[3].

Present Situation: Home Office, Drugs and Firearms Licensing Unit (DFLU)

The Home Offices' Drugs and Firearms Licensing Unit (DFLU) is the central authority for issuing controlled drugs licenses, these licenses are essential for clinical and medical research but also for other activities, that require the usage of controlled substances, including distribution and storage by companies with no direct medical research activities (e.g. unlicensed pharmacies, forensics or other adjacent businesses). On the face of it, especially to investors in the life science sector, there is a concern that the same government division that is licensing firearms is concerned with licensing medical opportunities for academics and companies conducting legitimate scientific research. This is compounded by the fact that companies doing no serious medical or scientific research are being provided licenses whilst companies actively engaged in good quality scientific R&D programs are facing obstacles due to inefficiencies related to the UKs licensing process.

Cannabinoids have shown significant potential in treating various conditions such as epilepsy, spasticity in multiple sclerosis, and medical applications in pain management, oncology treatments, and psychiatry (to name just a few active areas of research)[4, 5, 6, 7]. However, the current regulatory environment in the UK stifles such medical R&D activities. Most cannabinoids are classified as Schedule 1 drugs, while cannabis-based medicinal products (CBMPs) are classified as Schedule 2 controlled substances under the Misuse of Drugs Regulations 2001. This classification necessitates a Home Office licence for any research involving these compounds. While this strict control is intended to prevent misuse and diversion, it also creates substantial barriers for scientists and healthcare professionals[3, 8, 9].

The licensing requirements also impose stringent regulations on the storage, handling, transportation, and disposal of cannabinoids, all of which must be site-specific and person-specific. These controls are designed to prevent misuse and ensure public safety. However, in practice, they create significant administrative burdens that can discourage scientific and medical researchers collaborating across various institutions. For instance, a preclinical research project sending samples or experimental drugs to a different research institution also requires specific transport, as do multi-centre clinical trials across different UK universities, hospitals, and Contract Research Organisations (CROs). One important factor is that many NHS hospitals engaged in clinical research do not have the relevant Schedule 1 licences in place, creating further difficulties for research.

A timely regulatory review is needed from the government, the Home Office, and the Department of Health & Social Care (DHSC) to resolve these issues for researchers. Recent recommendations from the Advisory Council on the Misuse of Drugs (ACMD), echoed by other industry stakeholders, suggest reforms that could improve the research environment for cannabinoids. Revisiting the Misuse of Drugs Act 1971 and its 2001 amendment is critical to facilitate medical R&D with Schedule 1 drugs like cannabinoids[3].

Rationale: Strengthening the Research Environment and Encouraging Investment

Improving the cannabinoid research environment could be achieved by establishing regulations more aligned with recommendations from the ACMD ('Barriers to Research, Part 2, 2023)[3] and other groups working in drug policy. One suggestion is for the DHSC, particularly the Medicines and Healthcare products Regulatory Agency (MHRA), to take a more informed view in making licensing decisions for R&D with cannabinoids. The DHSC and MHRA are better suited to providing the scientific and medical expertise necessary for managing licensing processes. This approach would be more efficient, especially if the MHRA are allocated appropriate resources, to ensure that medical R&D is not delayed by inefficiencies – thus recreating the current situation but in a different organisation.

Streamlining bureaucratic procedures would allow researchers to focus on their scientific work, facilitating faster development of treatments. This is particularly important as evidence grows around cannabinoids' potential in areas like oncology and psychiatry[4, 5]. Reforming licensing processes could also help address unmet medical needs by speeding up clinical trials and ensuring that patients gain access to innovative treatments.

Finally, regulatory reforms would align with the UK government's broader economic goals. By reducing barriers to research, the UK can attract more investment, foster competition, and further its position as a global leader in cannabinoid science and medicine[6, 7].

Obstacles for Preclinical R&D – Fundamental Science

The preclinical stage of research is essential for building foundational evidence and ensuring the safety of medical cannabinoids. Preclinical studies, such as research into how cannabinoids or the endocannabinoid system (ECS) function, in cell cultures and animal models, are critical for informing later stages of R&D, including dosage, safety and mechanisms of action[8].

The cost, time, and complexity of obtaining a Home Office licence can be particularly prohibitive for academic institutions and smaller biotech firms conducting early-stage research. These barriers not only slow down the pace of discovery but also limit the diversity of research approaches, as only well-funded institutions are typically able to navigate the regulatory landscape and are agile enough with internal structures and expertise to do so (if the correct motivations exis to invest resources into cannabinoid research projects[8]).

Collectively, these obstacles drive up costs and contribute to a research environment where innovation is suppressed at the preclinical research stage.

Obstacles for Clinical Trials – Unmet Medical Needs and Delays

Despite the promising therapeutic applications of cannabinoids, the potential of this research area remains largely untapped due to the historical precedent around prohibitive controls in the UK and regulatory obstacles for licensing permissions for scientific and medical research. By improving licensing restrictions for medical R&D and promoting a more time-efficient and scientifically informed process by engaging with the MHRA, the UK can facilitate medical research and clinical trials focused on cannabinoid-based treatments. Moreover, it makes sense that the DHSC and MHRA are better suited and placed to provide medical expertise and guidance for UK cannabinoid researchers operating in the pharmaceutical, biotech, and healthcare sectors. This, in turn, would benefit patients who have limited options under the current healthcare infrastructure.

Clinical trials are essential for turning preclinical discoveries into effective treatments for patients. However, the UK's current regulatory framework makes it difficult for companies to conduct trials involving cannabinoids, often pushing them to conduct research in countries with more favourable regulations, such as Australia, Poland, or the USA.

The process of obtaining licences for clinical trials is time-consuming and uncertain, compounded by the complexity of coordinating multiple research sites, especially in NHS hospitals. Many hospitals do not have the necessary licences to handle Schedule 1 drug substances, delaying patient recruitment and the progress of trials. Simplifying the licensing process, particularly for hospitals, could remove these delays and facilitate the development of cannabinoid-based treatments.

Additional complexities on the schedule 1 licensing barriers for research are further complicated by the process of securing ethical approval, often done by jurisdiction for clinical trials that further hinders multi-centre and cross-institutional collaboration. These challenges (by being Schedule 1, ethics committees and investors perceive the research as enhanced risk due to stigma) results in delays and discourages researchers from conducting trials with cannabinoids[9]. Improving these processes will encourage more companies to conduct such clinical trials in the UK and help patients with unmet medical needs.

Obstacles for UK Businesses – The Need for Economic Growth

The UK has a strong biotech and pharmaceutical sector, but the complexity and cost of obtaining and maintaining licences for cannabinoid research deter businesses from operating in the sector, particularly small and medium-sized enterprises (SMEs). These challenges limit competition and innovation, pushing businesses to conduct research in countries with more favourable regulations. Furthermore, investors may be hesitant to commit to projects subject to complex and potentially changing regulations.

To address these challenges, the government must implement licensing reforms that support the growth of the cannabinoid sector, reduce risk and make an attractive investment environment for companies operating in the UK markets. This could include providing regulatory guidance and support to businesses and SMEs and creating a more predictable and stable regulatory environment for cannabinoid research. In effect, the UK can attract greater investment, nurture innovators, and ensure that the British biotech and pharmaceutical sectors remain competitive on the global stage.

Section 2: Policy Options and Implementation for Improving Medical Cannabinoid R&D

Exempt Clinical Studies with MHRA and HRA Approval from Schedule 1 Licensing

One policy option from the ACMD (Barriers to Research Part 2, 2023 – option 2[3]) is to exempt clinical studies approved by the MHRA and HRA from requiring Schedule 1 licences. This shift would align decision-making with medical expertise rather than with the Home Office, which currently lacks the necessary scientific resources. However, this policy will require some additional resources, such as training and funding, for the MHRA and HRA to manage the increased workload.

Exempt Approved Research Organisations and Projects from Schedule 1 Licensing

Another option (Barriers to Research Part 2, 2023 – options 3 and 4[3]) is to allow approved research organisations to be exempt from Schedule 1 controlled drugs instead operating in accordance with requirements of a lower schedule. This change would align licensing with Schedule 2 drug regulations, facilitating research within well-defined "approved" organisations or projects.

Care must be taken to ensure that private companies have equal access to this exemption, as the current system tends to favour academic institutions. Clear definitions and decision-making processes for what constitutes "approved research" or an 'approved research organisation' will be essential to ensure that both academia and industry can benefit equally.

Rescheduling Cannabinoids to Lower Schedules

Rescheduling cannabinoids to Schedules 2–5 based on scientific evidence (Barriers to Research Part 2, 2023 – option 6[3]) would open more opportunities for R&D. This policy should be approached using scientifically informed decision making consultations with medical experts, academia, industry, and government officials. Current ACMD and new working groups could be set up to evaluate rescheduling initiatives, ensuring that the unique properties of cannabinoids are considered (as a diverse class of drugs with varying characteristics).

Of particular note is cannabidiol (CBD), a non-intoxicating plant-derived cannabinoid, which can be generated by its total chemical synthesis in the lab. It is of current interest for treating a number of different medical conditions. CBD can be obtained in high purity – with controlled substances, such as THC, being undetectable by recognised analytical methods. Despite CBD itself not being a controlled substance, Home Office guidance states that "the presumption has to be one of caution" - meaning a product containing CBD would be controlled under the MDA 1971 / MDR 2001 as a result of its "other cannabinoid content". Therefore, clarifying CBD's legal status would remove barriers for researchers working with this compound.

Other Options for Practical Changes

- Update the Home Office's webpage on cannabinoid licensing, which has not been updated since 17 June 2020[10].
- Extend the exempt product definition to include products used for scientific research[3].
- Allow industry organisations to add Schedule 1 permits to existing licences without reapplying[3].
- Establish a consultation process with academia and industry to anticipate unintended consequences of new controls[3].
- Transferring the central licensing authority for cannabinoids for medical R&D purposes from the Home Office to the Department of Health & Social Care (DHSC), in particular the Medicines and Healthcare Regulatory Products Agency (MHRA).

Conclusion

Improvements to the licensing process for medical cannabinoid R&D are essential for advancing research, addressing unmet medical needs, and fostering economic growth.

The current UK regulatory framework, while ensuring security control over cannabinoids, imposes significant barriers to research and innovation. The Government, Home Office and other key decision-makers must respond to the ACMD's proposal from the 'Barriers to Research' review, part 2, 2023, in a timely manner.

By implementing reforms such as streamlining the licensing process, integrating scientific expertise, and reducing bureaucratic obstacles, the UK can enhance its position as a global leader in cannabinoid research. Strengthening the R&D environment will help tackle major healthcare challenges, support economic growth, and improve the quality of life for patients in the UK with unmet medical needs.

References

1. "Jazz Pharmaceuticals Completes Acquisition of GW Pharmaceuticals plc | Jazz Pharmaceuticals plc." Accessed: Jun. 20, 2024. [Online]. Available: https://investor.jazzpharma.com/news-releases/news-release-details/jazz-pharmaceutica ls-completes-acquisition-gw-pharmaceuticals
2. "Medicinal Cannabis: Economic Contribution - Hansard - UK Parliament." Accessed: Sep.05, 2024. [Online]. Available: https://hansard.parliament.uk/commons/2023-04-20/debates/6FE36998-D184-48A4-BA13-D600C2EC845E/MedicinalCannabisEconomicContribution
3. "Consideration of barriers to research: part 2 - GOV.UK." Accessed: Jul. 08, 2024. [Online]. Available: https://www.gov.uk/government/publications/consideration-of-barriers-to-research-part-2
4. A. Ligresti, S. Petrosino, and V. Di Marzo, "From endocannabinoid profiling to 'endocannabinoid therapeutics,'" Curr Opin Chem Biol, vol. 13, no. 3, pp. 321–331, Jun. 2009, doi: 10.1016/J.CBPA.2009.04.615.
5. O. Aizpurua-Olaizola, I. Elezgarai, I. Rico-Barrio, I. Zarandona, N. Etxebarria, and A. Usobiaga, "Targeting the endocannabinoid system: future therapeutic strategies," Drug Discov Today, vol. 22, no. 1, pp. 105–110, 2017, doi: 10.1016/j.drudis.2016.08.005.
6. L. Ondř and E. Hanuš, "Pharmacological and therapeutic secrets of plant and brain (endo) cannabinoids," Med Res Rev, vol. 29, no. 2, pp. 213–271, Mar. 2009, doi:10.1002/MED.20135.
7. V. Di Marzo and L. De Petrocellis, "Plant, synthetic, and endogenous cannabinoids in medicine," Annu Rev Med, vol. 57, pp. 553–574, 2006, doi:10.1146/ANNUREV.MED.57.011205.135648.
8. A. Howard, J. C. Neill, A. K. Schlag, and C. Lennox, "Schedule 1 barriers to research in the UK: An in-depth qualitative analysis," https://doi.org/10.1177/20503245211049313, vol. 7, p.205032452110493, Oct. 2021, doi: 10.1177/20503245211049313.
9. L. A. King, D. J. Nutt, and D. E. Nichols, "Remove barriers to clinical research for schedule 1 drugs with therapeutic potential," BMJ, vol. 381, May 2023, doi: 10.1136/BMJ.P981.
10. "Cannabis, CBD and other cannabinoids: drug licensing factsheet - GOV.UK." Accessed: Jul. 19, 2024. [Online]. Available: https://www.gov.uk/government/publications/cannabis-cbd-and-other-cannabinoids-drug-licensing-factsheet

Authors

Professor Trevor Jones CBE FMedSci

Zack Bellman

Acknowledgements

Dr. Andy Yates

John MccCracken

Clarissa Sowemimo-Coker

Jeremy Sturgess-Smith

Bill Griffin

Steve Moore

CRDG Founding Members

Ananda Developments

Artelo Biosciences

Brains Bioceutical

Curaleaf International

Kingdom Therapeutics

NW Pharmatech

Oxford Cannabinoid Technologies

Phytome Life Sciences

Cannabinoid
Research &
Development
Group UK

crdg.uk