

# Accelerating the adoption of digital innovation across the NHS

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#bettercarecostsless



Medicines & Healthcare products Regulatory Agency

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## AI In MHRA



As a science-led organisation, the MHRA has a key role to play in enabling the UK to be a science and technology superpower by 2030. The agency is considering the opportunities and risks of Artificial Intelligence (AI), which has been identified as one of the five critical technologies in the UK Science and Technology Framework, from three different perspectives.

- 1. As a regulator of AI products that impact on public and patient safety.
- 2. As a public service organisation delivering time critical decisions.
- 3. As an organisation that makes evidence-based decisions where that evidence is supplied by third parties.

# Product Lifecycle – AI Proof Of Concept Projects



#### Digital By Default. Secure By Design. Prove By Doing.

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## **Challenges and Opportunities**

We have identified ~20 use cases for prototyping with different technologies with different AI paradigms. Use-cases range from productivity, through to decision making across all areas of the business, including communications, customer service and Helpdesk; as well as across the regulatory activities for the whole product lifecycle, including post-market surveillance. We take a risk-*proportionate* approach tailored to each use-case rather than a 'one size fits all' risk-*averse* approach.



We have updated our 12-month technology roadmap with emphasis on three strategic themes: **innovation**, **technology modernisation**, and **cybersecurity** which are fundamental to the successful deployment of AI. We also have a refreshed plan for information governance and data protection policies as well as for new ways of working.

# Al for Clinical Trials

# Solution 1: Data Driven Guidance for Applicants (Proof of Concept)





# Solution 2: Good Manufacturing Practice – Interface (Proof of Concept)

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# Solution 3: Al-enabled Knowledge Hub Demo – (Proof of Concept)

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# Solution 3: Al-enabled Knowledge Hub Interface (Proof of Concept)

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# British Pharmacopoeia Enquiry Handling



General Sign Out

Medicines & Healthcare products Regulatory Agency

#### **BP AI Assistant**

Good afternoon, I have a query regarding the monograph for tramadol capsules. When monographs state, for example, that the GF/A glass fibre filter is suitable, is this a recommendation? Could I use, for instance, a 0.45-micron syringe filter instead? I look forward to your prompt response. Thank you in advance. Best regards.

#### \*

#### Al Assistant Dear BP User,

Thank you for your query regarding the monograph for tramadol capsules. When the monograph states that a specific filter, such as the GF/A glass fibre filter, is suitable, it is indeed a recommendation. However, you are not restricted from using alternative filters, such as a 0.45-micron syringe filter, as long as these alternative methods are known to provide results of equivalent accuracy. This flexibility is outlined in the General Notices Part 2 of the BP.

I hope this information clarifies your query. If you require further assistance, please do not hesitate to reach out.

Thank you,

The MHRA Team

#### References:

1 Query Regarding Filters

Query Regarding Filters

- Change proposal Tamsulosin Prolonged release Capsules
- 4 Query regarding the monograph for tramadol capsules

Ask anything...



# Fighting illicit websites with AI

# Focus On Illicit Websites – (Proof of Concept)

#### Problem

TRI partnered with the MHRA to combat the issue of websites selling medicines to the UK public illegally (without the required prescription, for example) - work that until now had been manual and time-consuming.

#### **Solution + Impact**

We developed an AI-powered tool that detects and analyses fraudulent online platforms. The tool uses web scraping to collect potentially suspicious URLs and leverages machine learning and Natural Language Processing (NLP) models for classification, identifying websites as red (high risk), amber (moderate risk), or green (low risk) **Identify suspicious sites** 

10x faster turning a 30-hour

task into a

3-hour

# Key Benefits and Impact

# DATE OF RUNTOTAL URL COUNTRAG RATING12.12.202426612 Red A178 (114 forbids scrapping + 64 analysis<br/>performed) Amber75 Green 📀

#### **Benefits**

✓ Customisable & Scalable

✓ Efficiency & Automation

Adaptable for various regulatory needs, with modular design for future enhancements.

Reduces manual workload for enforcement teams ✓ Proactive Fraud Detection

✓ Data-Driven Decision Making

Identifies emerging threats before they escalate.

Provides detailed insights into fraudulent trends and compliance issues.

### **Code Green!**

Generating one Al image takes as much energy as fully charging a smartphone

Al's carbon footprint is approaching 1% of global emissions

What we must address

'The Cloud' now has a larger carbon footprint than the entire aviation industry Along with the responsibility to keep our digital solutions safe, agile and modern, technology innovation brings an additional responsibility – sustainable computing or Green IT.

Green IT refers to designing, using, and managing digital solutions and technologies in an environmentally responsible manner.

MHRA is committed to doing what we can to create a more sustainable technology ecosystem that benefits users and the planet. Code Green!



Assess the location of agency servers

Things we<br/>can do to<br/>improveReduce our<br/>power<br/>consumption

Best practice engineering Code Green!



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# Thank you

