

In the UK's rapidly evolving pharmacy landscape, the concept of **pack serialisation** is becoming central to ensuring medicine safety, traceability, and regulatory compliance. With the move towards *electronic transmission of prescriptions* and integration of dispensing workflows, understanding the **unique identifier** on a medicine pack is crucial for pharmacists, healthcare IT analysts, and supply chain professionals alike.



What Is Pack Serialisation?

Pack serialisation refers to the process where each individual pack of medicine is assigned a unique code or identifier, often in the form of a 2D barcode. This unique identifier serves multiple purposes:

- Enables **medicine verification** at point of dispensing
- Supports **traceability** throughout the supply chain
- Facilitates detection of counterfeit or recalled medicines
- Satisfies legal and regulatory requirements, such as those from the MHRA and GPhC

The unique identifier is not just a batch or product code: it is a *serialised* number, which means each pack is [how technology reshapes pharmacy supply](#) different, creating a digital fingerprint for each medicine unit.

What Does the Unique Identifier Include?

According to the European Falsified Medicines Directive (FMD) and UK regulations, the unique identifier data matrix on a pack typically encodes the following key elements:

Data Element	Description	Regulatory Purpose
Product Code	Identifies the medicine (name, strength, form)	Ensures correct product dispensing
Serial Number	Unique pack-level serialisation code	Prevents counterfeiting and allows pack tracking
Batch/ Lot Number	Identifies the production batch	Essential for recalls and pharmacovigilance
Expiry Date	Defines pack validity	Ensures patient safety by preventing dispensing expired medicines

All this data is encoded in a 2D data matrix barcode (GS1 DataMatrix or equivalent), usually found on the primary or outer packaging.

How Does Serialisation Fit Into Pharmacy Workflow?

The unique identifier plays a critical role in modern pharmacy dispensing workflows. Here's how:

1. Electronic Transmission of Prescriptions (eTP)

E-prescribing (or electronic transmission of prescriptions) is replacing the traditional paper prescription in NHS and private settings. This digital format enables:

- Faster, less error-prone prescription capture
- Seamless forwarding to nominated pharmacies
- Integration with dispensing systems to pre-verify stock availability and pack serial information

When a prescription is electronically transmitted, pharmacy systems can already anticipate the required product and check against available serialised stock, improving efficiency and patient safety.

2. Nomination and Forecasting Demand

Nomination—the patient's choice of pharmacy—and forecasting medicine demand are tightly linked. Accurate demand prediction depends on knowing exactly which product and pack sizes are required. Pack serialisation supports this by:

- Allowing pharmacies to reconcile prescriptions with actual stock tied to unique serial numbers
- Enabling real-time stock traceability so shortages and expiry risks can be proactively managed

Forecasting demand is critical especially when pharmacies integrate robotically dispensed stock with manual operations, ensuring high-throughput dispensaries maintain the right inventory mix without overstocking.

3. Repeat Dispensing Scheduling

Repeat dispensing involves issuing multiple packs on a schedule without a new prescription each time. Serialisation aids repeat dispensing by:

- Tracking each pack dispensed against the patient's repeat schedule
- Preventing accidental reuse of packs or duplication of dispensing
- Supporting audit trails for regulatory compliance

Unique identifiers connect patient repeat records with exact packs, enabling pharmacists to verify and document each dispensed item precisely.

4. Robotic Dispensing and Barcode Traceability

Increasingly, pharmacies deploy robotic dispensing solutions for efficiency and accuracy. These automated systems rely heavily on barcode scanning of serialised packs to:



- Identify the correct pack swiftly
- Ensure packing and labelling accuracy with the linked electronic prescription
- Maintain a tamper-proof electronic record of the dispensed serial number

Handheld barcode scanners, integrated with dispensing software, validate every pack's unique identifier before it reaches the patient, satisfying GPhC inspection points and MHRA verification requirements.

Why Is Medicine Verification Crucial?

Medicine verification means confirming that a pack is genuine, not recalled, and fits the prescription before leaving the pharmacy. This step legally satisfies the FMD and MHRA regulations aiming to protect patients from falsified medicines.

In practice, verification means scanning the unique identifier and crosschecking with the national medicines verification database. Pharmacies must do this electronically before supplying the medicine, ensuring:

- **Authenticity:** The pack was produced and released by the authorised manufacturer
- No recalls or safety alerts apply
- Expiry dates are valid

With electronic prescriptions already integrated, this "one extra scan" becomes a natural part of the workflow, mitigating risks without adding significant time if implemented well.

Common Misconceptions and Correct Perspectives

A few points often confuse those new to serialisation:

- **Serialisation is not just about stock management.** It is a legal requirement with drug safety as the primary driver.
- **It's more than scanning a barcode; it involves an ecosystem.** The pack's unique identifier must link to central verification databases and dispensing software.
- **Pharmacy is not like retail.** Verification impacts patient safety and regulatory compliance, unlike normal barcode scanning for pricing or inventory.

Always ask: *What regulatory requirement is this step satisfying?* This keeps you focused on why unique identifiers and serialisation matter beyond logistics.

Conclusion

Pack serialisation and unique identifiers in pharmacy play an essential role in modern medicines management by ensuring traceability, verification, and regulatory compliance. The integration of serialisation into electronic transmission of prescriptions, nomination processes, repeat dispensing, and robotic workflows marks a significant step towards safer and more efficient pharmacy practice.

By understanding what the unique identifier contains, how it fits within dispensing workflows, and the regulatory context enforced by the MHRA and GPhC, pharmacists and healthcare IT professionals can better leverage these tools for improved patient safety while maintaining operational efficiency.

After all, every scan of a serialised pack is a chance to confirm one more step of safe medicine supply—never just a barcode but a seal of trust.