MANDATORY MEDICINES BARCODES UNDERPIN PATIENT SAFETY AND THE SHIFT FROM ANALOGUE TO DIGITAL MEDICINES MANAGEMENT

Under the EU Falsified Medicines Directive (FMD), 2D barcodes were mandatory on UK medicines packaging. Since the UK left the EU, because of the Windsor Framework, printing barcodes on UK medicines packs became voluntary. **Increasing amounts of UK medicines packs are now being produced without a 2D barcode.**

Two thirds of NHS Trusts are receiving medicines packs without this critical safety element. Across the supply chain, pharmacies and distributors have had to introduce time-consuming workarounds that increase the risk of human error. **This continues to impact on NHS productivity, operational efficiency, patient safety, and delivery of pharmacy services. The NHS vision to increase automation for medicines management is becoming impossible.** Without 2D barcodes, NHS productivity will decrease and the government's ambition to modernise the NHS approach to medicines management will not be realised.

The government and the MHRA should take immediate steps towards making 2D barcodes mandatory by consulting on medicines barcoding.

An increasing number of UK medicines packs do not have a barcode

Recent dispensary data for one NHS Trust has shown that 40% of medicines lacked a 2D barcode, rising to 71% at ward level. A similar impact was seen in a second Trust at ward level, where 62% of medicines packs did not have a GS1[1] barcode. Feedback indicates that the situation is worsening. NHS organisations are reporting an increasing number of medicines packs being supplied without 2D barcodes.



In Spring 2026, GS1 UK[2] surveyed NHS Trusts on the impact of missing, incorrect, or inaccurate barcodes on pharmacy services. 64% of the 44 NHS Trusts who responded received medicine packs without a barcode in the preceding month, with 57% of respondents reporting that missing, incomplete, or inaccurate barcodes had a moderate to severe impact on pharmacy workflows. Trusts highlighted both increasing workload and safety concerns.

Figure 1

[1] GS1 is a global standards organisation and create globally unique identifiers (e.g. GTIN for product identification). GS1 UK is a not -for-profit standards organisation.

[2]https://www.gs1uk.org/insights/news/the-impact-of-missing-and-inaccurate-barcodes-on-NHS-pharmacy-services?utm_content=383981956&utm_medium=social&utm_source=linkedin&hss_channel=lcp-521571

Missing barcodes cause issues across the medicines supply chain

The linear barcode encodes a globally unique identifier called the Global Trade Item Number or GTIN whilst the 2D barcode contains the GTIN, batch number and expiry date[3]. This ensures every pack is uniquely identifiable, traceable and verifiable (Figure 1). Under the EU FMD all medicines packaging needed to include a 2D barcode encoding a GTIN. The removal of these barcodes has caused significant disruption across the supply chain (Figure 2).



Figure 2

The removal of barcodes on UK medicine packaging causes:

- **Compromised patient safety -** Medication errors compromise patient safety and are the leading cause of avoidable harm in the NHS, with 237 million incidents annually, contributing to 1,700 deaths[4]. The use of bar codes is a critical part of the solution to reduce this risk.
- **Reduced productivity and efficiency in the NHS and across the medicines supply chain -** Pharmacy teams and distributors have to adopt manual processes if automated systems cannot recognise a medicine pack using the barcode.
- **Barcodes on medicines packaging provide traceability across the medicines supply chain.** They enable processes such as Scan4Safety that reduce the risk of dispensing and administration errors including incorrect and / or expired medicines. For example, in one Trust, barcode scanning during medicines administration prevented 113,674 potential wrong

[3] https://health.ec.europa.eu/document/download/c5921d42-f0d2-404a-8844-4a581b393a14_en?filename=reg_2016_161_en.pdf
[4] https://qualitysafety.bmj.com/content/30/2/96

medicine or dose administration[5] . Another study found that barcode scanning in pharmacy reduced dispensing error rates by 76%[6].

- **Increased medicines waste -** 2D barcodes enable automated stock management of medicines across the supply chain.

Removal of barcodes will have an increasing impact on digitalisation of the medicines pathway in the future

The NHS 10-year plan set out an ambition to modernise medicines management to make better use of technology such as dispensing robots. This automation is underpinned by the use of 2D barcodes, which are increasingly being removed from UK medicines packaging. As the supply, distribution and administration of medicines becomes more automated and digitised, the impact of "missing" barcodes will become even greater, increasing workload on pharmacy and nursing staff and necessitating workarounds, resulting in more labour intensive processes.

The absence of barcodes on medicines packs undermines the integrity of the medicines supply chain. Not only does this inhibit traceability and patient safety, it also makes the assignment of packs of medicines with patient outcome data impossible. Without this, the UK's ambitions to easily measure and collect data on patient outcomes, both for real world analysis and for supporting clinical trials, will be undermined.

To support the digitisation of the medicines supply chain, the recent House of Lords Medicines Security Report recommended the government mandate the use of the 2D barcodes on medicines. Automation generates valuable data to improve procurement, strengthen medicines supply chain resilience, support access to medicines, and enhance medicines security.

Call to action - The government should mandate the use of 2D barcodes on medicines

- UK-wide pharmacy leaders have called for action: Chief Pharmaceutical Officers of Wales, Northern Ireland, Scotland and England have urged pharmaceutical companies marketing UK medicines to reinstate 2D barcodes on medicines packaging for safety and operational reasons.[7]
- The issue has wider regulatory and parliamentary recognition: The significance of medicines barcoding has been acknowledged by the MHRA[8] and the House of Lords Public Affairs Committee[9].

The DHSC recognise the importance of medicines barcoding in enabling the accurate identification of medicines for patient safety and automation[10] and recently stated it is "*looking to consult in due course on the types and use of barcodes that might be needed on medicine packs"*[11]. **This consultation should begin immediately and should consider the impact on patient safety, NHS productivity and efficiency, and implementation of the NHS 10 year plan.**

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[5] https://www.gs1uk.org/sites/default/files/GDE_Closed-Loop_Medicines_Toolkit.pdf
[6] https://scan4safety.nhs.uk/wp-content/uploads/2022/11/gs1_uk_a_scan_of_the_benefits_report-1.pdf
[7]https://mcusercontent.com/440612f6fe24f0dac190dac6a/files/7bd39e2b-ff96-c59c-4ec9-c0e240aa25c6/250620_CPhOs_The_Safety_and_Operational_Benefits_of_2D_Barcodes_Final_Letter.pdf
[8]https://mhrainspectorate.blog.gov.uk/2025/11/18/the-importance-of-accurate-gtin-and-2d-barcode-data-in-the-modern-healthcare-environment/
[9] https://publications.parliament.uk/pa/ld5901/ldselect/pubserv/252/252.pdf
[10] https://questions-statements.parliament.uk/written-questions/detail/2025-11-25/94401
[11] https://committees.parliament.uk/publications/52580/standard/pdf/

Increasingly, the most effective healthcare relies on the rapid adoption of new technologies and A4BC plays a key role by accelerating progress in connected medicines management. Connected medication management (CMM) shifts the medicines pathway from analogue to digital, improving safety, reducing waste, enabling better patient care and reducing the pressure on frontline staff. By bringing together the NHS, industry and policy leaders from across the UK, A4BC is driving and shaping this transformation by co-developing solutions, aligning standards and sharing best practice.

A4BC is delivered by the PRSB in partnership with industry and the NHS. The PRSB is an independent community interest company and membership organisation established for 13 years dedicated to the development and implementation of health and care data standards. Members include the Royal Colleges, social care organisations, industry and system suppliers, patient and carer groups, regulators and the Devolved Administrations.