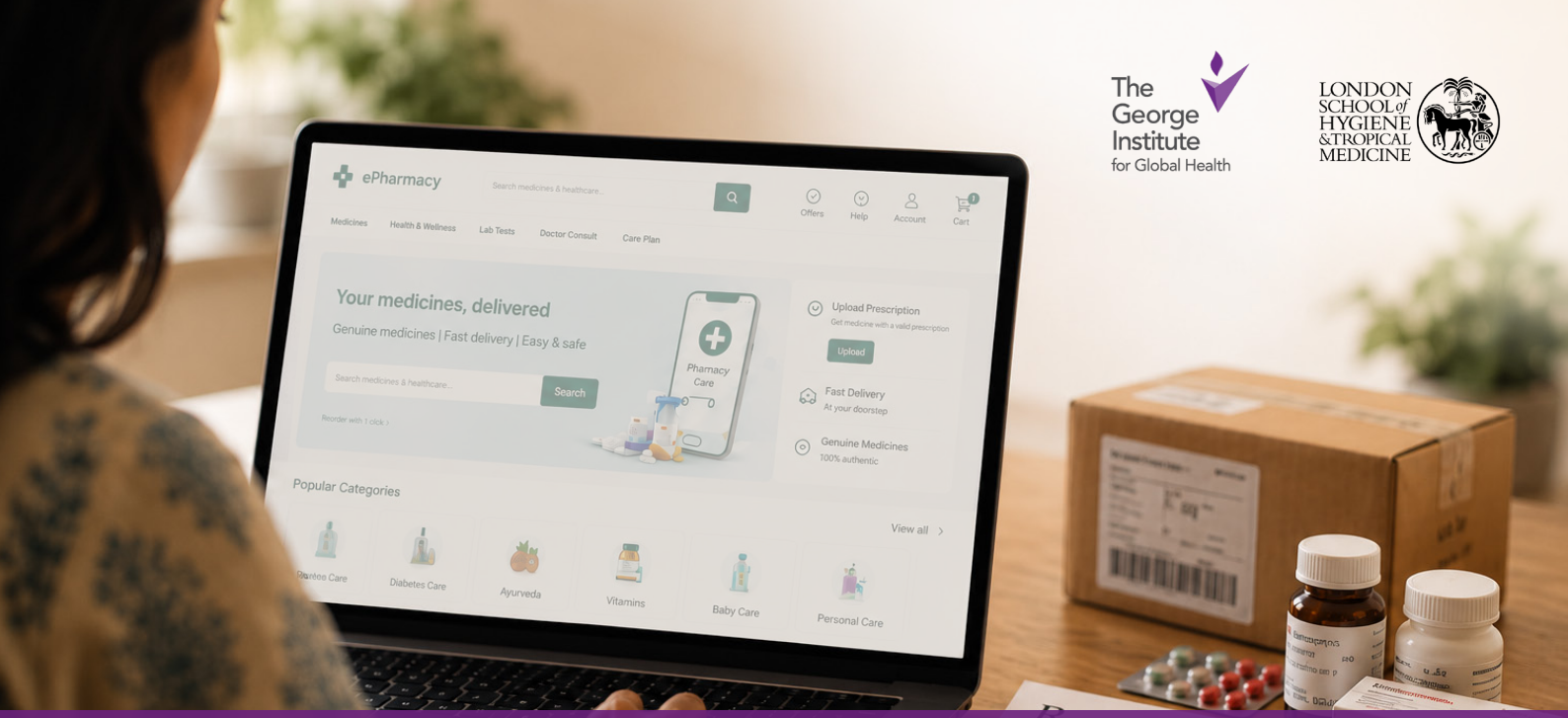


E-pharmacy in India

Regulation, Practice and Performance

New Empirical Evidence and Policy Options

JULY 2026

Key points

- India has one of the fastest-growing e-pharmacy markets globally, with forecasts estimating a market size of approximately USD 12–14 billion by 2034. E-pharmacies offer significant potential to improve access to medicines, particularly for patients requiring long-term treatment and those facing mobility or geographic barriers.
- Despite rapid market growth, India is yet to enact e-pharmacy-specific regulations. The government has developed draft rules for the sector, but these have not been enacted, with progress stalled for several years amid legal challenges and resistance from brick-and-mortar pharmacies to e-pharmacy expansion.
- New empirical research assessing e-pharmacy websites and apps serving Indian consumers shows incomplete and uneven compliance with proposed regulatory requirements and best practices, with e-pharmacy platforms meeting an average of 54% of such requirements.
- Mystery shoppers, who posed as online consumers purchasing medicines, identified substantial gaps in prescription requirements and clinical safety checks. Prescription-only medicines were supplied without a prescription in over one-third of cases. Among cases involving potentially harmful medicine requests (such as excessive quantities or contraindications), medicines were supplied in more than half of cases.
- E-pharmacies with a higher number of consumers tend to demonstrate higher compliance with proposed regulatory requirements and best practices and better performance in mystery shopper assessments. As these market leaders were approximately twice as likely to manage patient encounters correctly, there is scope for regulators to work with them to raise standards across the sector.
- Mystery shopper evidence also shows that e-pharmacies in India are less likely than brick-and-mortar pharmacies to dispense prescription-only medicines inappropriately — though serious gaps in pharmacy care persist across both sectors.

Background

E-pharmacies have expanded rapidly in India over the past decade, driven by high smartphone penetration, increasing consumer familiarity with online platforms, and accelerated adoption during the COVID-19 pandemic. E-pharmacies have the potential to improve access to medicines through online ordering and home delivery, particularly for people with chronic conditions or mobility issues, and those in underserved or remote areas.

This expansion has occurred amid prolonged regulatory uncertainty. Concerns have been raised regarding the sale of prescription-only medicines without a prescription, inconsistent clinical screening and counselling, the emergence of poorly regulated providers, and risks to patient data security and misuse of personal health information.

This policy brief draws on new empirical research to describe how e-pharmacies currently operate in India, assess adherence to proposed regulatory requirements and best practices, and evaluate the quality of pharmacy care delivered in practice. It concludes by outlining policy options to strengthen regulation, patient safety and professional standards.

Methods used to investigate the e-pharmacy market



Regulatory review

A structured review and critical appraisal of regulations in India, alongside a comparative analysis of international regulations.



Website and app review

Review of all 61 e-pharmacy websites and mobile apps serving the Indian public at the time of the study, evaluating compliance with proposed regulatory requirements and international best practice.



Mystery shoppers

671 mystery shopper purchase attempts across all e-pharmacies. Trained researchers posed as customers to assess dispensing practices using scenarios with and without prescriptions, and including potentially harmful medicine requests (excess quantity and unsafe use in pregnancy).



Delivery review and visual inspection

Medicines obtained were checked to ensure they matched the ordered brand, dose, and quantity, and whether they included essential dosing instructions and patient information leaflets. They were also visually inspected for the integrity of primary and secondary packaging, evidence of tampering or leakage, and the legibility of labels and expiry dates.



Stakeholder consultations

Interviews and workshops with a range of stakeholders including e-pharmacy staff, professional associations and former regulators to identify feasible policy and regulatory responses.

Overview of the e-pharmacy market in India

India's retail pharmacy sector is dominated by approximately 850,000 brick-and-mortar pharmacies, though e-pharmacies are reshaping medicine sales and distribution. E-pharmacies currently account for 2–3% of total medicine sales, with projections suggesting growth to 15% within the next decade.

Several e-pharmacy business models operate in parallel, including inventory-based platforms, marketplace or aggregator models linking consumers to physical pharmacies, and franchise models operating under national brands. Alongside prescription medicines, most platforms sell over-the-counter medicines, health supplements, and traditional or complementary medicines. A minority also offer online doctor consultations or laboratory services.

The e-pharmacy market remains concentrated in urban areas, with extensive use of discounts and digital marketing. Platforms vary widely in ownership structure, with a mix of domestically registered and foreign-hosted services and multiple payment options including cards, cash on delivery, and mobile-based instant transfers (e.g., UPI).

Regulatory context

India's e-pharmacy sector operates without enacted, e-pharmacy-specific regulation. Medicine sales are governed primarily by the Drugs and Cosmetics Act (1940) and Rules (1945), which predate online commerce. In practice, e-pharmacies are subject to general laws, including the IT Act (2000), Consumer Protection (E-commerce) Rules (2020), and the Digital Personal Data Protection Act (2023).

As illustrated in Figure 1, this regulatory vacuum has persisted for over a decade; while draft e-pharmacy rules introduced in 2018 proposed centralised registration and prescription controls, they remain unenacted despite subsequent draft bills and multiple court-mandated deadlines for the government to finalise a framework.

Legal challenges, jurisdictional complexity (as health is largely a state subject), and intense opposition from brick-and-mortar pharmacy associations have contributed to these prolonged delays.

Figure 1: Policy timeline of key events

2015

DECEMBER
The Drug Controller General of India notifies that all e-pharmacies must comply with the 1940 Drugs and Cosmetics Act and 1945 rules

2016

NOVEMBER
FICCI launches a voluntary 'Self-regulation code of conduct' for the sector

2017

AUGUST
Government draft Pharmaceutical Policy 2017 encourages e-pharmacy growth

2018

AUGUST
The Ministry of Health releases the Draft E-Pharmacy Rules, proposing centralised registration and narcotic sales ban

SEPTEMBER
Intense brick-and-mortar retailer opposition stalls the government's 100-day enactment deadline

DECEMBER
High Courts issue online sales bans and order the government to finalise regulations

2020

MARCH
Doorstep delivery of medicines is approved during COVID-19 lockdowns

2022

JULY
Draft Drugs, Cosmetics and Medical Devices Bill launched with negligible mention of e-pharmacies

2023

NOVEMBER 2023-MARCH 2024
The Delhi High Court sets repeated deadlines for finalised e-pharmacy regulations

2024

APRIL
Brick-and-mortar associations campaign for a total ban of e-pharmacies within election manifestos

2026

FEBRUARY-MAY
Brick-and-mortar associations campaign to the Prime Minister about e-pharmacies and organise a nationwide strike

How do Indian e-pharmacies perform in practice?

Evidence across the patient journey

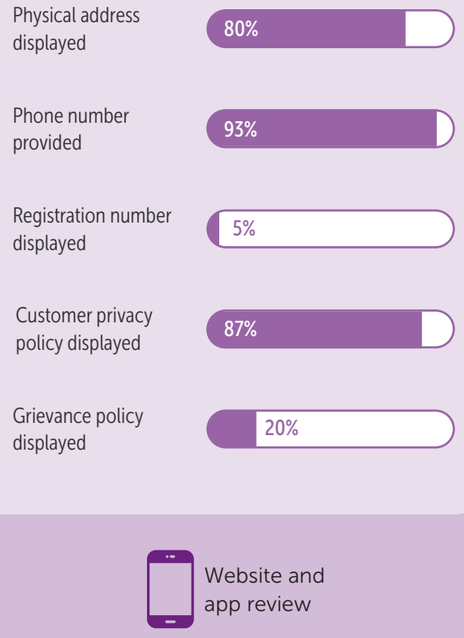
To understand how e-pharmacies serving Indians perform in real-world settings, the research examined patient experiences across the full online purchasing pathway, from first contact with a website or app through to the receipt of medicines. Findings are presented across four stages of this process below.

1

1 Visiting the website or app



Can I trust this site?



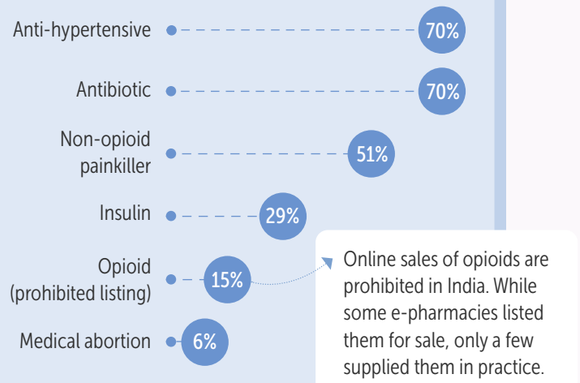
Website and app review

2

2 Selecting and ordering medicines



Is the medicine I need listed for sale online?



Is information provided on how to use it safely?

16% of e-pharmacies provided complete drug information on their website, including side-effects and contraindications.

Website and app review

Mystery shopper

3

3 Safeguards before medicines are supplied

Is a prescription required and verified?

90% of websites provided a facility to upload a prescription.



Will anyone check if the medicine is safe for me?

E-pharmacies asked about allergies in **13%** of orders, and asked about other medicines being taken or potential contraindications in fewer than **1%** of cases.

Website and app review

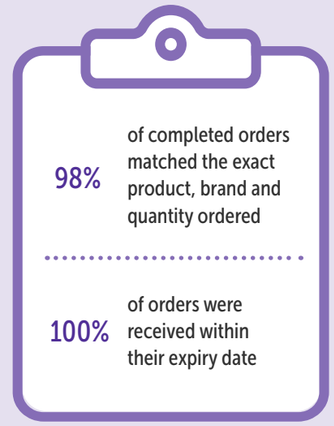
Mystery shopper

4

4 Delivery and medicines received



Did I receive the correct medicines?



Are instructions provided?

96% of orders obtained through mystery shoppers had no dosing instructions.

95% of orders obtained through mystery shoppers had no product information leaflet.

Visual inspection

Which e-pharmacies perform better?

To explore variation among e-pharmacies, they were grouped according to the number of visits to their websites, identifying a subset of higher-traffic market leaders. These e-pharmacies account for a large share of consumer interactions and tend to be larger and more established.

E-pharmacies with higher numbers of website visits were more likely to adhere to proposed regulatory requirements and best pharmacy practices than those with fewer website visits. Overall, higher-traffic websites met an average of 8.7 of the 14 proposed regulatory requirements and best practices, compared with 7.1 for others.

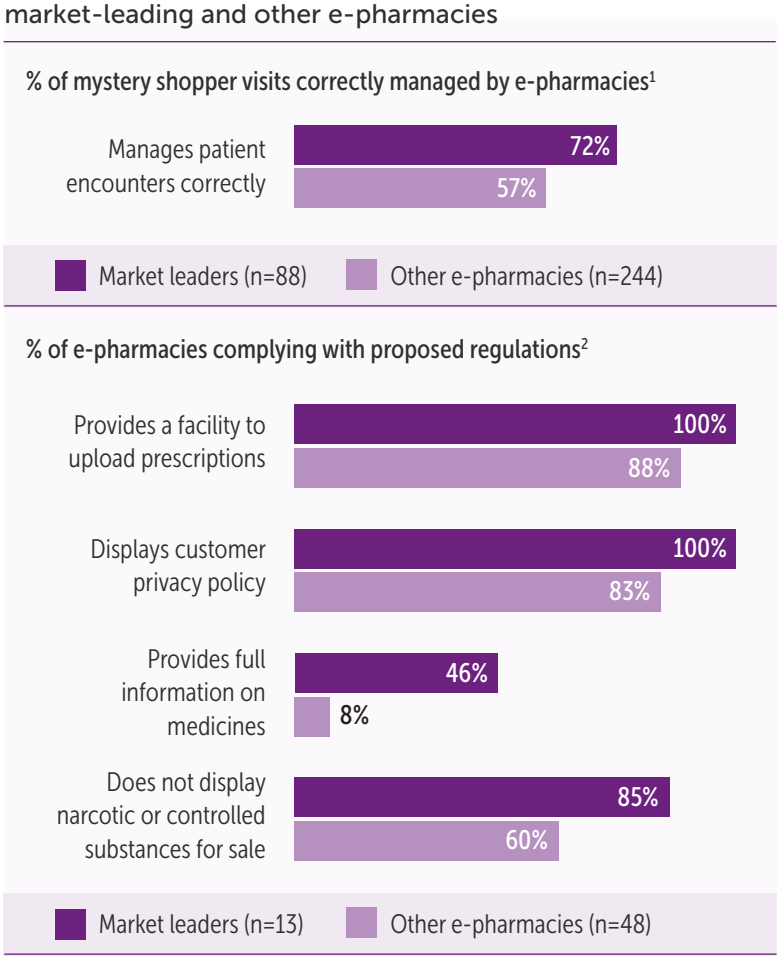
Stronger performance in mystery shopper assessments

Mystery shopper visits provide further evidence of meaningful differences in practice across the market. E-pharmacies with higher numbers of website visits were more likely to manage purchase attempts correctly, particularly where requests should have been refused or required additional scrutiny (Figure 2).

Correct management of purchase attempts (such as refusing to dispense prescription-only medicines without a valid prescription) was approximately twice as likely on the most-visited e-pharmacies compared with the least-visited platforms. Market leaders were also more effective at blocking sales in high-risk scenarios and sales of controlled substances.

However, important gaps remain. Even among market leaders, mystery shoppers reported frequent failures to apply basic clinical safety checks, including screening for allergies, pregnancy, or concurrent medicines before dispensing.

Figure 2: Regulatory compliance and performance among market-leading and other e-pharmacies



1. Estimates adjusted for casetype, medicine sought and clustering within e-pharmacies. P-value for difference in adjusted percentages: 0.119

2. As percentages for these indicators are based on a census of e-pharmacies, statistical tests for significance were not conducted

How do e-pharmacies compare with brick-and-mortar pharmacies?

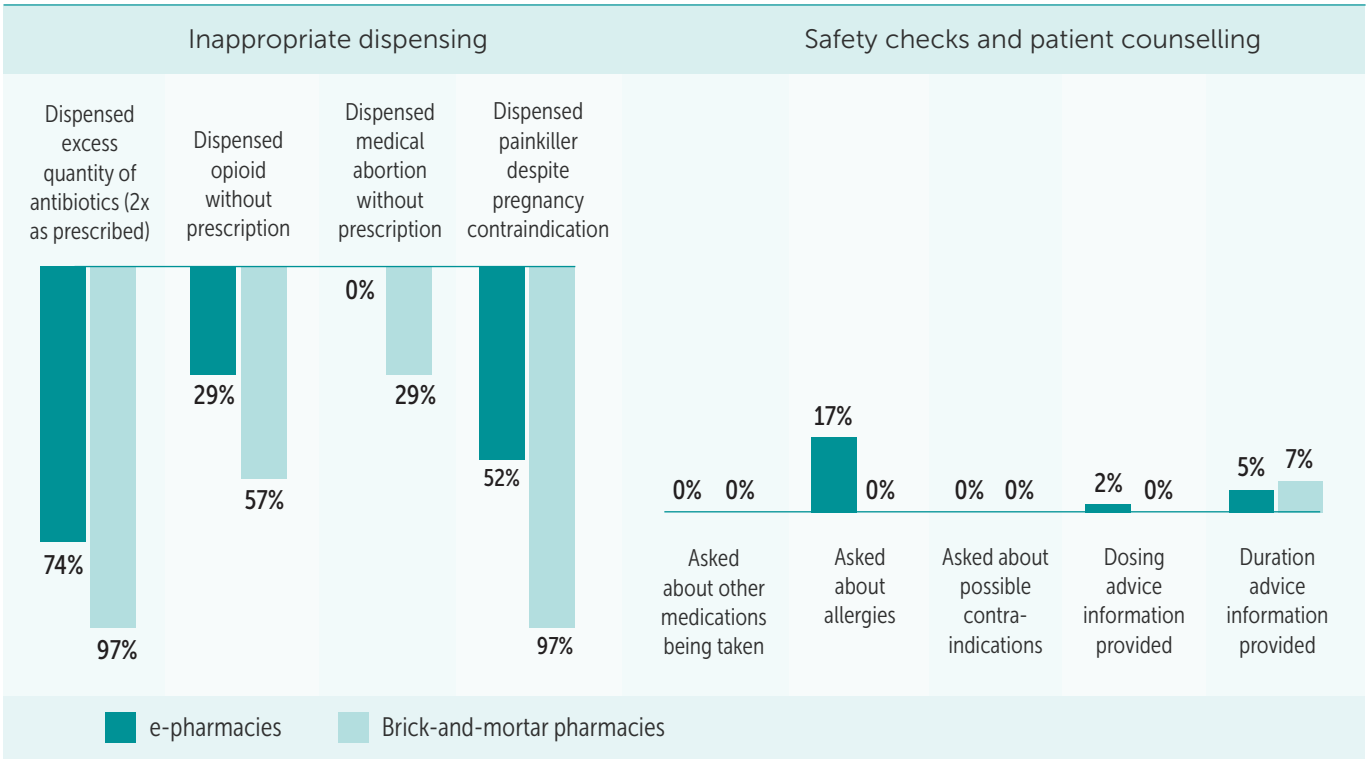
Traditional brick-and-mortar pharmacy associations in India have frequently argued that e-pharmacies pose a significant threat to public health by providing lower-quality care than physical outlets. A subset of mystery shopper scenarios was repeated in 100 brick-and-mortar retail pharmacies in a metropolitan city. This allowed a direct comparison of the quality of pharmacy care. Substantial clinical safety gaps were observed in both sectors.

Lower rates of inappropriate dispensing in e-pharmacies

E-pharmacies were generally less likely than brick-and-mortar pharmacies to dispense prescription-only medicines inappropriately (Figure 3). For scenarios where a larger quantity of antibiotics than what was

mentioned on the prescription was sought, 74% of e-pharmacies dispensed the medicine inappropriately, compared with 97% of brick-and-mortar pharmacies. For requests involving opioids without a prescription, 29% of e-pharmacies dispensed the product versus 57% of brick-and-mortar pharmacies.

Figure 3: Comparison between e-pharmacies and brick-and-mortar pharmacies



Universal gaps in safety checks and patient counselling

Pre-dispensing safety screening was critically low in both brick-and-mortar and e-pharmacy settings. E-pharmacies asked about allergies in 17% of encounters but did not screen for pregnancy, concurrent medicines, or contraindications. Brick-and-mortar pharmacies did not conduct any of these checks. Provision of dosing and duration advice was minimal in both pharmacy types.

Stakeholder perspectives: Areas of concern and potential solutions

Consultations with e-pharmacy representatives, brick-and-mortar representatives, former regulators and other stakeholders confirmed that many of the safety and compliance gaps identified in this research are widely acknowledged.

Stakeholders highlighted continued dispensing of prescription-only medicines without valid prescriptions and the absence of reliable mechanisms to verify prescription authenticity, linking these issues to the potential for drug misuse. Stakeholders also pointed to limitations in supply-chain traceability and storage oversight, as well as broader concerns regarding regulatory clarity.

While these concerns were frequently framed in relation to online supply, the mystery shopper findings indicate that inappropriate dispensing and limited clinical safety checks occur in both e-pharmacy and brick-and-mortar settings, with e-pharmacies performing better on prescription enforcement measures.

Consultations also explored a range of possible policy responses, spanning regulatory requirements and oversight mechanisms, technical safeguards, training and capacity building for e-pharmacists, and awareness initiatives aimed at supporting safe medicine use among consumers. These perspectives informed the policy options presented on the next page.

Priority policy actions for India's e-pharmacy market

This section outlines priority actions to strengthen India's e-pharmacy market. A first priority is to implement the requirements proposed in previous draft e-pharmacy rules to provide regulatory clarity. These include:

- Mandatory national-level registration
- Valid prescription required
- Display ownership and registration details
- Prohibit sale of narcotics and Schedule X medicines
- Provide full medicine information
- Oversight by a registered pharmacist
- Enforce grievance redressal mechanism
- Digital records, audit trails and inspections

The actions that follow focus on practical steps to strengthen compliance and improve the quality of pharmacy care, including both immediate measures and longer-term reforms where indicated. Progress will require engagement across the pharmacy ecosystem to address longstanding disagreements around the appropriate regulatory framework. Given that higher-traffic websites performed better, there is scope for regulators to work with these market leaders to promote best practices sector-wide, though care should be taken to avoid undue regulatory influence by any particular actors.

Eliminate rogue and illicit e-pharmacies

- Introduce complementary national and state-level registration systems
- Mandate display of registration certificate, linking to the regulator's website
- Work with search engines and internet service providers to block or deprioritise rogue providers

Ensure compliance with prescription requirements for prescription-only medicines and scheduled medicines

- Require upload of a valid prescription at the first step before browsing or purchasing prescription-only medicines
- Require dispensing records to document quantities supplied and ensure they match the quantities prescribed
- Consider integrating standardised patient methodology into regulatory inspection and internal audit systems
- Consider the introduction of electronic prescriptions with unique identifiers to reinforce compliance with prescription requirements and prevent inappropriate reuse *(longer term)*

Improve quality of pharmacy care

- Require drug-specific safety checks covering interactions, allergies, contraindications and side effects
- Mandate that pharmacist counselling and instructions are available on call
- Enforce provision of patient information leaflets for all medicines (as per existing Pharmacy Practice Regulations 2015)

Safeguard the quality of medicines supplied

- Require temperature-controlled packaging and delivery-time limits for temperature-sensitive medicines
- Require manufacturers to introduce QR/barcode tracking across the medicine supply chain *(longer term)*

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