BEYOND COMPLIANCE

Rethinking Drug Safety and Traceability in 2026

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Overview

In an era where pharmaceutical counterfeiting poses an existential threat to patient safety and brand integrity, the conversation around drug traceability has evolved from a compliance checkbox to a strategic business priority. This conversation brings together two distinct perspectives: *Dr. Avi Chaudhuri*, a subject matter expert who has witnessed the industry's evolution, and *Abiram Vijayakumar*, who is building AltiusHub for the next generation of supply chain traceability.

About the speakers

Dr. Avi Chaudhuri

Former Chief Scientist at Systech and founder of The Kulinda Consortium, Avi Chaudhuri introduced mass serialization to India’s pharmaceutical industry. His journey to evangelize consumer-centric authentication began in 2004, when he became a victim of counterfeit drugs. Today, he brings uncompromising scrutiny to industry practices, informed by decades of global anti-counterfeiting experience.

Abiram Vijayakumar

As the founder of AltiusHub, Abiram Vijayakumar leverages an extensive background in digital transformation and enterprise-scale optimization to secure the world’s most critical supply chains. He bridges the gap between complex regulatory mandates and scalable digital infrastructure, informed by a decade-long career at the intersection of business strategy and industrial evolution.

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Question to Avi

Avi, you've spent years writing about drug safety and counterfeiting. Your recent work on India's QR code program was particularly sharp, calling it an *"anatomy of a debacle."* For those who view compliance as the finish line, why is this failure a critical wake-up call, and what should be part of the conversation beyond mere compliance?

The pharmaceutical industry in India had waited for years for regulatory guidance on the best way to combat counterfeiting practices. When the QR coding program was announced by the Ministry of Health and Family Welfare, most felt that they had turned a corner, marking the beginning of a new era of consumer safety. A broad consensus emerged that compliance with the mandate would be sufficient to fight counterfeiters, and the industry moved quickly to adopt the program, believing it had reached the "finish line," as you put it.

In reality, the success of any program depends on both *the strength of the solution* and *how it is implemented.* In this case, both factors failed. The mandate was riddled with loopholes, forcing companies to interpret it in ways that best suited their constraints. While many implementations were technically compliant, the lack of consistency meant that some outcomes were actually worse than having no program at all.

As a result, counterfeit medicines in the Indian market now falsely reassure consumers that they are genuine, and in many cases, scanning the QR code offers no reliable way to distinguish real products from fake ones. The core objective of consumer protection has been undermined.

So that is the real wake-up call. Drug makers must quickly take corrective action to prevent further harm to their brands and, more importantly, to their patients, while staying within the confines of the QR mandate. The good news is that it can be done, and in most cases, quite easily.

Question to Abiram

Abiram, why did drug traceability feel like the right space for a young brand like AltiusHub to focus on, and how do you align your mission with the current realities of the regulatory frameworks?

Avi, what you described earlier is exactly why this space felt unavoidable. Anti-counterfeiting measures have now become just a hygiene factor, while the real-world implications continue to remain fatal and tragic.

Counterfeiting stops being an abstract policy issue the moment you realize it's about medicines that could reach our parents, our children, or any one of us. That sense of personal and societal responsibility is what drew us in. What became clear early on was a growing gap between definitions of regulatory requirements and the actual requirements for patient safety. Regulations are essential, but they're designed to set minimum guardrails. Counterfeiters, on the other hand, operate entirely outside those guardrails, in the shadows.

The issue is further exacerbated by the presence of legacy systems whose only interest is to siphon money off a customer by giving them a subpar product. While I am totally in to run a business by providing traceability solutions, I would do so by giving a product that actually works.

Also, traceability felt like the most meaningful place to contribute because it sits at the intersection of trust, accountability, and execution. We didn't enter this space just believing that technology alone could solve counterfeiting. We saw it as a way to strengthen intent; to help companies that genuinely want to protect patients, and do so in a way that holds up beyond audits and checklists.

That's how we align with regulations. We respect the framework, but we don't treat it as the end goal. Compliance is where the work begins. Building systems that protect patients and preserve brand trust is the outcome we're committed to.

Question to Avi

Avi, in your articles, you often draw a sharp line between authentication and traceability, arguing they are different but must converge. Can you elaborate more on this distinction, in the context of recent failures with batch-level or static QR codes?

Product traceability (Track & Trace) provides granular information on a product's journey from the plant to the pharmacy, including who handled it, where, and for how long. It delivers significant business value by giving brand owners visibility into supply-chain movement and insight into secondary sales. However, an end-to-end traceability program does not ensure that the medicine being purchased is genuine, unexpired, or not stolen. Criminal networks can penetrate even highly regulated supply chains through weak points.

Drug authentication requires something on the package that can be interrogated, ideally empowering consumers to verify the product at the point of sale using a smartphone. This was the stated objective of India's QR program. However, two regulatory loopholes undermined that goal. The first was a "space loophole," which allowed QR codes to be placed on secondary packaging if they could not fit on the primary pack. Since most medicines in India are sold as blisters or strips, where counterfeiting risk is highest, many companies placed the code on cartons never seen by consumers, eliminating point-of-sale verification altogether.

The second loophole was the absence of a unique serial number on each saleable unit. Without unit-level identity, effective authentication is impossible. Many companies relied instead on batch-level QR codes, sometimes requiring consumers to manually enter batch numbers on a verification page. This makes it impossible to distinguish genuine products from counterfeits. The result is dangerous false reassurance: consumers are told a product is authentic when it may not be, and brands lose the ability to differentiate genuine from fake products.

Question to Abiram

Abiram, how does AltiusHub see itself adding value to the traceability ecosystem?

In this ecosystem, governments set the baseline, and consumers verify at the point of use. But brand owners are the only ones who can decide how a product's identity is created, managed, and protected across the lifecycle. That is where most technical failures originate.

A recurring issue we see is the reliance on batch-level traceability to address problems that require unit-level certainty. Batch data can support logistics and reporting, but it cannot establish authenticity. Hence, our approach begins at the unit level, with the generation of truly unique, non-repeating identifiers. These are created using advanced algorithms, with global uniqueness standards, to reduce the risk of cloning or duplicates. The emphasis is not just on creating identifiers, but on how they are governed and verified over time.

We build this using AI-driven architecture that focuses on how these identifiers are generated, governed, and verified, followed by best standards of printing and scanning. This allows authentication and traceability to work together, instead of operating as parallel or loosely connected functions. As a company formed in the AI era, we are not constrained by legacy architectures. We can iterate quickly, adapt to evolving regulatory realities, and align more closely with what the market needs today.

AltiusHub's role in the ecosystem is very clear. We will empower the regulatory bodies and policy makers with a product that truly understands the grassroots requirements and supply chain scenarios. We will also empower the customers with an intelligent product that adapts to changing regulations and counterfeiting scenarios, without the need to have a team of service agents who only flip the on-off switch to fix any problem.

Question to Avi

Avi, Consumers today are more aware, but also more uncertain. We talk about Government and Industry, but the Consumer is the final line of defense. How do we empower them to scan and verify without placing the burden of safety on them?

Consumer empowerment is a key requirement for a successful program. Although the Indian QR mandate was designed with this in mind, I think it is fair to say that the objective has not been met. When talking to pharmacists, I find widespread ignorance of the program or even what a QR scan would mean for patient protection. Parenthetically, this may have actually turned out to be a blessing, given how easily India's program has been compromised with fake products sporting fake QR codes.

So to obtain consumer confidence, the first requirement is to install an effective program — one that is easily recognizable, provides immediate authentication, and most importantly, is not cloneable onto fake products. Once these three technical requirements are met, then will come the absolute necessity of public exposure and adoption. No matter how good a program is technically, it will be fruitless without mass adoption. And that will not be a burden in my view. Most people will willingly take the extra step to verify their medicine at the point of purchase, as long as they are informed about the personal benefits it will bring to them.

Question to Avi

Avi, technology is often positioned as the silver bullet. Based on what you've seen, where do expectations need to be more realistic? What is the one thing technology cannot solve in the fight against counterfeiting?

Let's say that a technology is available that is perfect in terms of securing the product, easy to implement in current packaging processes, will be enduring and therefore provide value to all stakeholders, and finally just happens to be economical. That is the best of all worlds. But what is the one thing it cannot solve? The answer is public adoption.

A thoughtful and well-developed public authentication program is the starting point that must be followed by sustained effort for consumer adoption. A lot of people think that merely deploying a technology, such as the current QR coding program, will solve the problem. Technology is never a silver bullet but must be curated for public use so that it receives the widest adoption. So the one thing technology cannot solve is to convince a consumer to spend those precious moments to actually use it. That is where human factors come into play.

So, a realistic expectation is to combine an excellent technology with public promotion so that more and more people begin to use it. And given the sensitivity with personal healthcare, such an effort will, I believe have every opportunity to snowball into successful outcomes.

Question to Abiram

Abiram, since we are talking about technology, what do you think separates technology investments by pharma companies that age well from those that become obsolete in a few years?

From what we see, technology investments tend to age well when companies retain control over their data and their choices. One challenge many pharma leaders face today is vendor lock-ins, systems built on proprietary formats or closed architectures that make it difficult to adapt, integrate, or exit. These solutions may meet current requirements, but over time, they are limited in flexibility, especially as regulations, partners, and markets change. More prudent investments are designed with interoperability in mind. They separate core data - product identity, events, and verification, from how that data is consumed or reported. That way, companies can respond to new mandates or workflows without being forced into a complete system overhaul.

A critical perspective on technological investments is their dependency. A good dependency is one where you know your data is safe, untouched and interoperable across the supply chain, as prescribed by the regulatory mandates. The system is capable of context switching with respect to different supply chain partners and does not require any internal data manipulation to do so. A bad dependency is when, due to vendor lock-ins, you are stuck with a rusty product whose maintenance requires an internal ecosystem of paid support services. Once this ecosystem is put in place, moving away from that without incurring business risks becomes almost impossible.

Fortunately, at AltiusHub, we have a very safe, compliant and robust way to transition out of this cursed dependency. In my experience, the technologies that last are those chosen with long-term operational control in mind, not just short-term compliance mandates. That mindset gives leaders room to evolve without being constrained by yesterday’s decisions.

Question to Avi

Avi, if we were to time-travel five to seven years from now, what would meaningful progress in drug traceability look like?

A full end-to-end traceability program will have meaningful impacts across multiple business strata where different demands can benefit through a convergent outcome. I have argued however that such a program will be difficult to execute in the Indian marketplace due to the sheer volume of supply chain participants. That does not mean that steps cannot be taken to create meaningful progress. However, that will require thinking out of the box and developing solutions that prevail within the Indian context. So one area of progress that I see unfolding is toward developing novel approaches that take into account prevailing constraints, encompass the vastness of the Indian market and through it all remain economically viable in terms of execution.

I am therefore really impressed that AltiusHub has created a truly innovative solution that provides the visibility that brand owners covet, and yet which can be deployed within the current constraints. And what's more, the solution you have shown me can be implemented by an individual company without the need to have a governing mandate for such a program, thereby bringing the needed business benefits without the necessity of a complex and costly undertaking.

So, I am hopeful that India will have an enduring authentication program that will bring immense benefit to its consumers and, at the same time, have a traceability program in place that is context-specific and which brings immense benefits to the Indian pharma industry.

Question to Abiram

Abiram, if we were to time-travel five to seven years from now, what would meaningful progress in drug traceability look like?

Avi - Your words are kind, thank you.

And I totally agree with you. Meaningful progress will probably look quieter than most would expect, but it is far more practical.

It won't be defined by sweeping new mandates or increasingly complex programs. It will be defined by how harder it becomes for the counterfeit medicines to enter the supply chain, how easier it is to detect them and how swiftly can action be taken on them before they reach the consumers. This way, unit-level authentication will work reliably, and systems will stop creating false reassurance for patients and regulators alike.

From a leadership perspective, traceability will be treated less as a recurring OPEX or compliance project. It will be seen as a critical infrastructure that empowers quality, risk management, and brand protection on an ongoing basis.
For the consumers, it means a much deeper assurance towards something as basic as safety. Safety for themselves and their loved ones and no fear of consuming counterfeit medicines that disrupts lives.

AltiusHub is already steadily marching towards the above vision. One step at a time. Patient enough to handle every pharma enterprise's requirements in a curated way, aggressive enough to expand this quality across the value chain.

Ultimately, progress will be measured by resilience; systems that continue to protect patients, brands, and businesses even as markets scale, regulations evolve, and counterfeiters adapt.

BEYOND COMPLIANCE. TOWARDS TRUST.

Compliance sets the baseline.
But Trust is earned through execution.

As counterfeiters adapt and regulations evolve, drug safety will depend on systems that protect patients and brands in reality, not just on paper.

An AltiusHub Conversation

Building modern traceability solutions for real-world supply chains

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