A Numbers Game

As legislation moves to implement global anti-counterfeiting solutions, the pharma industry is under increasing pressure to adopt serialisation measures to improve patient safety. Companies will need to find a way to maintain supply continuity, despite the obstacles.

The introduction of track and trace legislation – which is being adopted in several countries to protect against counterfeiting and improve overall safety through traceability – may be a step forward in the war against counterfeit drugs. However, at present, many pharma executives view this legislation as a barrier to getting products to market. Instead of dwelling on the obstacles, pharmaceutical companies should act now to ensure that they have the right partners to advise and counsel them. With expert assistance, companies can effectively prepare for this major transition and maintain their continuity of supply.

Although some contract packaging organisations (CPOs) have started the process of putting together the systems and equipment to meet different global regulatory deadlines, many are still a long way away from achieving these requirements. Even those with programmes already in place could run into resource constraints that will limit progress.

Of particular concern is the fact that the limited specialists in the field of track and trace regulations may already be contracted to the first movers in this area – primarily Big Pharma and some of the larger contract manufacturers.

It is important to ensure that sourcing managers take this issue into consideration when looking for a contract manufacturing partner for a new product scale-up or technology transfer of existing products. It may become a requirement to find a CPO advanced in track and trace preparations as a potential second source of supply, to mitigate the risk that existing suppliers are not compliant for your markets. This article outlines some of the main challenges faced by pharma companies and CPOs in adapting to these new regulations, and highlights factors that companies should pay attention to when selecting their partners for the transition.
Ensuring Compliance

The consequences of non-compliance vary from market to market, and range from a product being banned from release, to a fine per pack failing to meet the country-specific requirements. At best, pharma companies may be able to manage fines, but ultimately compliance will be unavoidable and will result in loss of market access. Therefore, it is in a company’s best interest to understand the terms.

Understanding the Terms

There are several terms used to explain serialisation and track and trace requirements:

- Serialisation refers to the application of unique serial numbers – often as a DataMatrix code alongside human-readable text – on every saleable unit of prescription medication for the affected markets, with issued serial numbers to be logged and communicated to a central repository for later interrogation.

- In some markets, aggregation is also required, which refers to the act of assigning child-level serial numbers (for example, individual packs) to a unique parent serial number (such as a case), creating an electronic association or hierarchy that mirrors that of the physical goods.

- Information can be combined with a pedigree, a document that provides a business history for a particular batch of drugs, including the date of each transaction and the names and addresses of all parties involved.

- Documentation is used for track and trace, where the tracking of product occurs through the supply chain with transaction/pedigree information being sent to an electronic repository at each stage.

- Some countries are adding tamper evidence as a requirement. Tamper evidence is a feature, device or process – such as stickers, glue or modified cartons – that makes unauthorised access to the product easily detectable. This will be required under the EU Falsified Medicines Directive.

These requirements are all becoming part of regulations for international markets. Although global in nature, specific requirements and implementation deadlines differ from market to market.

The California Board of Pharmacy was one of the earliest bodies to propose a serialisation requirement. This occurred in 2004 with the proposal to introduce e-pedigree in an attempt to prevent counterfeit, diverted or adulterated medicines from entering the supply chain. The deadline for introduction was repeatedly pushed back until 2009, when the requirements were set for a 2015 implementation date.

However, in November 2013, the US federal government passed the Drug Quality and Security Act, which supersedes the California law and sets requirements for transaction information as early as 2015, and serialisation requirements for November 2017.

Several other markets are considered early adopters, as shown in Table 1.

Table 1: Markets that have been early adopters of serialisation requirements

<table>
<thead>
<tr>
<th>Country/region</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>Serialisation by 1 January 2015</td>
</tr>
<tr>
<td>Brazil</td>
<td>Serialisation, tracking and reporting capability by 10 December 2015</td>
</tr>
<tr>
<td>China</td>
<td>In process, with serialisation and reporting for all products by 31 December 2015</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Serialisation by 31 March 2016</td>
</tr>
<tr>
<td>US</td>
<td>Serialisation by the manufacturer by 27 November 2017, with other requirements to follow</td>
</tr>
<tr>
<td>EU</td>
<td>Serialisation and tamper evidence expected by late 2017/early 2018</td>
</tr>
</tbody>
</table>

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Figure 2: Serialisation applies to all drug delivery products to ensure a complete transaction history for each batch of drugs.
Pharma companies must act quickly to select a strong vendor to help them with the implementation process. However, there are only a limited number of experienced firms available. Furthermore, even when a company partners with a practiced vendor, implementation will still require high levels of manpower that a smaller CPO may not be able to support while attending to its day-to-day business. Downtime will be required on lines to implement the equipment changes, and the CPO will need to carefully manage its production schedules to ensure there are no product shortages.

An additional challenge will come with the transfer of data between companies and governments. There will be serial numbers that need to be tracked and sent back and forth, as well as the final lot data which will need to follow the product through the supply chain. To ensure thoroughness, we recommend that full records are kept on each production batch back to the source of components and active pharmaceutical ingredients. Such records go beyond existing track and trace requirements, ensuring full quality control can be maintained at every stage of the manufacturing process.

Verify and Aggregate

Initially, companies will be occupied with the need to generate and/or receive serial numbers, both from customers and government agencies. This will require either modifications to current IT systems or the addition of new applications. For these reasons, it is essential to undergo a rigorous vendor selection process in order to determine vendors who have knowledge of global equipment and IT solutions.

Although equipment and systems will be able to manage a lot of the track and trace requirements, reliance on these alone will provide a false sense of security. It is also essential to have highly trained staff with appropriate standard operating procedures in place to manage exceptions. While a system can be configured to minimise the risk of errors, certain manual operations or interventions will still rely on competent operators following established procedures. For example, manual removal of packs from the line may require the operator to ensure that the product is scanned and logged appropriately to allow the system to maintain an accurate record.

Early Preparation

It is highly likely that global demand will outstrip supply when implementing these standards, so pharma companies must act quickly to select a strong vendor to help them with the implementation process. However, there are only a limited number of experienced firms available. Furthermore, even when a company partners with a practiced vendor, implementation will still require high levels of manpower that a smaller CPO may not be able to support while attending to its day-to-day business. Downtime will be required on lines to implement the equipment changes, and the CPO will need to carefully manage its production schedules to ensure there are no product shortages.

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There are also engineering challenges related to the equipment portion,
which include integration with other equipment, space on the lines, and challenging visual inspections through multi-layered film. In addition, there will be an increased difficulty in rework and the potential to affect productivity due to the serialisation, aggregation and tamper-evident features.

Further challenges lie with managing differing customer expectations and requirements, along with the various and evolving needs of each market. All of these conditions require flexibility in the solutions provided.

Common Standards

Track and trace regulations are ultimately a positive move for the pharma industry and, once incorporated, will offer better protection for products. However, global integration of the necessary requirements and systems will take time, and pharma should ultimately keep in mind the possibility of a move towards a common global standard.

Until this happens though, the key to success lies in ensuring that companies are working with vendors that can achieve the deadlines for compliance in their key markets. If there is any doubt about this, then it may be prudent to obtain a second source of supply with an organisation that is compliant. By acting now to prepare for these changes, companies can ensure a smoother transition and uninterrupted supplies.

About the authors

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