Patient Safety and Product Quality

Ensuring Quality and Patient Safety in Processes and Products

Protecting patients and consumer health by ensuring the quality and safety of our products is at the heart of how we operate across our network. Every step of our development, manufacturing and monitoring processes - from product development to sourcing of raw materials to producing finished dosage forms - is grounded in this commitment.

Quality Management

We maintain a quality infrastructure at the global level that includes Global Quality Policies which set a uniform expectation for fundamental topics within the Quality Management System, as well as Global Quality IT systems which are implemented and designed to establish industry best practice and consistency throughout our global network.

All our operational facilities have management systems, standards and processes in place which are designed to ensure product quality and safety across our operations and to be in compliance with the quality principles and practices applicable to the markets in which our products are provided, such as current Good Manufacturing Practice (cGMP), Good Pharmacovigilance Practice and Good Clinical Practice.

We apply relevant quality guidelines, including: Eudralex, Falsified Medicines Directive, ICH Quality Guidelines, WHO GMP, Food and Drug Administration Safety and Innovation Act (FDASIA) and the EU Excipient Risk Assessment for ascertaining GMP for excipients of medicinal products for human use. We use a Regulatory Intelligence and Knowledge Management Dissemination Program to better inform, evaluate and implement regulatory updates, industry trends and internal knowledge.

The company's Quality Management System (QMS) and Product Safety and Risk Management System maintain standard operating procedures for core components including but not limited to:

- Managerial responsibility
- Regular training
- Regular audits
- Products risk assessment
- Regular testing
- Regular compliance monitoring
- Incident investigation, corrective and preventative action

Quality Governance and Organization

The Head of Global Quality reports to the President and the following functions are within the overall Global Quality structure:

- Global Operations Audit
- Global Learning and Development
- Global Quality Compliance
- Global OSD and API Quality
- Global Injectables Quality
- Global Dermatologics Quality
- Global Biologics Quality
- Global Respiratory Quality
- Global Quality Systems/QA IT Technical Quality
- Global Quality Investigations
- Global Quality Operations, Affiliates
- Global Quality Integration/ Surveillance
- Global Clinical and Bioanalytical Quality

We continuously evolve our quality organization to ensure alignment with the business operations and to enhance compliance with applicable standards. We enhanced our overall operations and quality organizations to further improve connectivity and oversight throughout the global network. Quality leadership was expanded to facilitate broader surveillance functions and to continue to optimize compliance. Existing global quality resources are embedded within the operational verticals to align closely with the business units and drive consistency across the sites. These enhancements promote closer connectivity among operational leaders and lead to improved product quality, supply continuity and patient access.

As part of the continual work to assess and adapt quality management, we have further enhanced global policies and procedures on investigations, training, post-market safety reporting, computerized systems validation and infrastructure, self-inspection, auditing, and health, hygiene, and contamination control to further drive consistency in practice and allow more efficient trending and life-cycle management.

Training for Continuous Improvement

Our Global Operations Training program provides consistent and effective training to assure access to and delivery of knowledge to global operations personnel. This program coordinates and standardizes training requirements, content, techniques and training delivery methods to continually strengthen our corporate learning culture. Employees are provided training on quality culture to ensure personnel have a clear understanding of our commitment to quality. We also provide a regulatory intelligence program that provides all personnel access to current global regulations, publications and industry trends.

- Our Global Operations Training program ensures that role-specific and periodic cGMP training programs are compliant with regulatory requirements both regionally and globally. cGMP training is conducted on an annual basis in accordance with regulatory requirements. In addition to training on the theory and practice of cGMP, we utilize a curriculum-based approach to ensure all analysts, operators, and other personnel are fully trained based upon their defined job descriptions and assigned duties. The curricula are specifically designed for each job description.

Supplier quality training is reviewed as part of the supplier selection due diligence process. In addition, throughout the business relationship, supplier employee quality training is reviewed as part of the routine GMP audits.

Procedural and GMP training is provided for all personnel whose duties are in any way associated with the manufacturing, packaging, processing, holding, or testing of products or whose duties require them to enter manufacturing areas or laboratories, as well as any other personnel whose activities could affect the quality of the product. Personnel working in areas where contamination is a hazard, such as clean areas, sterile areas or areas where highly active, toxic, infectious, or sensitizing materials are handled, are given additional specific training.

Training in cGMP is conducted by qualified individuals to assure that employees remain familiar with the specific cGMP requirements applicable to them.

Quality Monitoring in Our Operations

Our program relies primarily on oversight by a specially trained team of internal global experts, augmented and supported by independent third parties. The global internal audit program is a key component of our oversight and monitoring of the quality performance across our network. The internal audits are designed to proactively evaluate compliance against the GQM/ GQP and global cGMP regulations.

- Internal sites are required to provide appropriate corrective and preventative actions in response to any observations with agreed upon timelines for implementation.
- Dedicated audit leads are assigned to quality operations within each vertical to participate in all internal audits within that vertical. There is collaboration with site and vertical leadership to develop more robust processes and re-evaluate existing processes from a risk standpoint and develop appropriate risk mitigation mechanisms. Internal audits are performed on an annual basis for each production site.
- Quality Council programs at each site oversee and monitor key performance indicators, track quality incidents, identify trends and have the authority to escalate incidents to senior quality leadership.

In recent years we streamlined the global internal audit program to include expedited timelines for issuance of observations and increased site leadership engagement to ensure immediate remediation of identified observations. We further increased focus on global investigations oversight, third-party management, and surveillance across our sites.

We have expedited the internal audit process by augmenting the program to mimic the U.S. FDA 483 process. Our stringent policy requires interna1l sites to develop mandated corrective actions within 15 business days and to implement them within 90 days. These CAPA are submitted to our Global CAPA Management team for review and approval. Furthermore, any CAPA from critical and/ or major observations are verified by the Global Operations Audit Team.

Quality Risk Assessment

Proactive risk assessment is central to our approach to ensuring quality. We apply the principles outlined in the Quality Management and Quality Risk Management guideline by the ICH[1]: the ICH Q9 Quality Risk Management, as well as those in ICH Q10 Pharmaceutical Quality System.

Ensuring a High Quality Supply Chain

To help ensure the integrity of our supply chain, external suppliers and third parties are taken through a rigorous Business Contract Review and Approval/Supply Network Committee (BCRA/SNC) approval process prior to being engaged for the supply of an active pharmaceutical ingredient (API) or a drug product. As part of this process, a contractual agreement called a Quality Technical Agreement (QTA) may be implemented that specifically details our expectations and the right to perform regular on-site audits to ensure compliance with regulations and our expectations, notification of health authority inspections and outcomes, and access to all records related to the supplied products.

- The Global Operations Audit program for supplier management includes risk-based assessment scoring of external suppliers based upon current health authority regulatory compliance, dosage form, supplier type, date of our last conducted audit, audit history and severity of observations. The risk scores further facilitate audit prioritization and the supply chain decision-making process.
- To support some external suppliers in meeting quality standards, we have implemented a program that can place company Quality personnel in person at the site of a supplier to engage, monitor, and mentor the site team and foster

quality compliance. Improvements are assessed as part of the review of manufacturing and packaging of each batch prior to release. This program has been successful in educating and improving compliance of our external manufacturers and ensuring quality product is produced and released.

- We conduct routine audits to assess the strength and performance of the QMS. Frequency is based upon cyclical audit requirement by facility type, historical regulatory inspection performance, and key product launches.
- In 2020, in response to the pandemic, we instituted a virtual audit program that enabled us to effectively conduct audits and remain in compliance with regulatory auditing requirements. In total, 700 GMP, 72 GCP and 22 PV audits[2] were conducted by the company's global Quality team at our facilities and suppliers.

External contractors and suppliers approved for business with us are recorded in an internal global database which encompasses a mixture of third-party manufacturers (sterile and non-sterile), third-party packagers, third-party laboratories, distribution centers, miscellaneous service providers, API suppliers (sterile and non-sterile), excipient suppliers and packaging component suppliers.

Working with Health Authorities

We constantly review our products, processes and facilities throughout our network and work closely with external health authorities to ensure transparency with emerging information, including shortages, adverse-event reporting of other manufacturers' products, development of new scientific and testing criteria and evolving regulatory and manufacturing expectations everywhere we operate. We continuously learn from these interactions as scientific, technology and regulatory expectations continue to evolve.

- The health authority inspections provide extensive external certification of the company sites and our suppliers and provide authorization for further production and marketing.
- Regarding Viatris' active FDA Warning Letters, we are making progress according to plan to resolve the identified non-conformities.
- In 2020, 44 health authority inspections were conducted across our facilities.[2] The COVID pandemic had an impact on this number compared to 2019.

Notable International Health Authority Inspections in 2020 include: FDA (USA), EMA, HPRA (Ireland) and MHRA (United Kingdom)

Patient and Product Safety

Our Product Safety and Risk Management function has a robust Pharmacovigilance (PV) system supported by robust global processes and underlying policies on product safety and is responsible for ensuring patient care and safety in relation to the use of our products during both their development and once placed on the market.

Global PV governance committees, such as the Corporate Product Safety Committee (CPSC) and Pharmacovigilance System Oversight Committee (PSOC), involving empowered cross-functional stakeholders, provides forums for periodic and ad-hoc evaluation of new safety information of company products and facilitates full oversight of compliance with global regulations. Potential new safety information is assessed and evaluated through our corporate safety governance structure and new information is communicated in a timely manner to healthcare professionals, patients and health authorities.

To manage safety of a diversified and complex product portfolio - prescription medicines, generics, medical devices, food supplements, cosmetics - we have highly skilled and trained cross functional teams of medical and scientific professionals who assess and report our risk and benefit assessments to global health authorities.

- In 2020, the company submitted over 300,000 individual safety reports and more than 1,500 aggregate reports to health authorities and business partners.[2]
- The company currently has more than 280 risk management plans and associated interventional measures[2] designed, where required, to help ensure our products are used safely and effectively.

As part of our PV system, the benefit risk profile of all of our products is continuously monitored and assessed, ensuring safety information about our products is provided to both healthcare professionals and patients in a timely manner.

Our PV system includes standard operating procedures for managerial responsibility and standardized processing for all activities. The procedures are continuously updated to allow oversight and PV governance. As we have come together with Upjohn to form Viatris, we have already created or updated more than 50 procedures. In late 2020, more than 10 new procedures were created following implementation of the U.S. FDA's new Post-Marketing Safety Reporting requirements for Combination Products legislation in the U.S.

Key activities are monitored for performance and compliance against standards, targets and thresholds. The PV system is subject to both internal and external audits and inspections by regulatory authorities from around the world. The company's

compliance and deviation monitoring mechanisms are in place for any observations resulting from audits and inspections to ensure they are thoroughly analyzed for root cause and that impact is addressed.

As appropriate, corrective and preventive actions are tracked until their effective implementation for compliance with worldwide pharmacovigilance obligations are implemented. All processes are compliant with the EU Good Pharmacovigilance Practices (GVP) or, if applicable, stricter regulations anywhere in the world.

Our Product Safety & Risk department is a key component of our PV system and participates in all internal and external audits, which are conducted regularly, along with ensuring that the personal health information of those participating in our clinical trials is carefully safeguarded.

In 2020, in addition to the 22 PV audits[2] conducted by our Global Operations Auditing team, there were 10 external audits by business partners and four PV inspections by national health authorities conducted at our facilities. No critical findings were identified during these audits or inspections in 2020.

The internal audit schedule is based on a robust risk assessment with all PV system processes and all stakeholders in scope. The frequency of the audits is normally one year for global process service providers and around three years or shorter for affiliates based on risk assessment.

We conduct training that complements the company's policy on PV Training Standards, which defines training curriculum, frequency, effectiveness measurements and documentation and other requirements. Employees who are part of our PV systems are assigned professional development training courses based on individual experience. In 2020, for patient safety, we have trained over 38,000 colleagues on the obligations of Adverse Event reporting and this training is provided in 27 languages.

In our continuous effort to innovate and enhance our system, we continued our efforts in 2020 to further explore the use of emerging technologies, such as cloud-based solutions, automation, artificial intelligence (AI), data analytics and digital communication interfaces in our areas of safety-case report management, upgrading of our global safety database (ARGUS) and safety surveillance with objective to potentially enhance our product safety evaluation, communication and risk mitigation capabilities.

Product Testing

All ingredients used in our products undergo testing to assure they meet registered specifications, and those that do not are rejected. For all products, as regulated by GMP, we conduct extensive testing throughout the product lifecycle including raw material, intermediate, and finished product and post-distribution stability testing in compliance with the registered specifications as approved in each marketing authorization for the markets in which those products are provided

Product Recall Management

Effective quality and product safety management systems are designed to detect potential risks and may result in product recalls as part of their design. These recalls are largely initiated by a pharmaceutical company as a precautionary measure in cases of possible or actual risk to the quality and safety of the product and/or risk to the patient. Though there is no harmonized international standard between countries on what constitutes a recall, we have a global requirement that each company site must maintain a written procedure to govern the recall of products based upon health authority regulatory requirements in the territories in which our products are provided. Additionally, a recall may often be performed out of an abundance of caution and therefore, can be a positive metric as it relates to the health of a Quality Management System (QMS).

Promoting Product Security and Fighting Falsified Medicine

To mitigate the risks from counterfeit products and protect the security of products and safety of patients, we have a formal infrastructure to support oversight of product security and guide applicable efforts. Our Product Integrity Coordination Committee consists of leaders from Compliance, Quality, Regulatory, Medical Affairs and Security. The company's Product Security team conducts an annual risk assessment of the portfolio to determine those products which may be at a higher risk for counterfeiting or diversion activity. This assessment takes into consideration several aspects including therapeutic category, dosage type, regulatory concerns, medical affairs concerns, and previous incident history. Products with higher levels of risk are given priority attention when it comes to analysis and market monitoring. We also use intelligence gathered from open market analysis to prioritize risk.

We conduct internal investigations when there is suspicion of counterfeit or at-risk products and to support health authorities and law enforcement investigations. In addition to internal resources, we are also collaborating with external stakeholders such as online sales platforms, to ensure that counterfeit products avoid reaching the hands of our patients.

We have controls to guard against theft and diversion of controlled substances and operate a system to identify suspicious orders of controlled substances. At the same time, it is just as important to ensure an uninterrupted flow of medicine to the patient.

We have a cross-functional team including members from Compliance, Customer Relations, Controlled Substance Monitoring, Global Security, Distribution Center, Regulatory Legal, Regulatory

Affairs, State Licensing and DEA that works to maintain and continuously enhance our strong programs designed to detect and prevent diversion within the supply chain, while assuring there is an uninterrupted flow of medication to our customers and patients across the globe.

Our suspicious order monitoring program holds some key components, including but not limited to;

- Experienced compliance team
- Dedicated suspicious order monitoring team
- Data and analytical programs
- Know Your Customer (Due diligence) process
- Education and training
- On-going state and federal collaboration efforts

In addition, we also have a concentrated product diversion program, which encompasses anonymous reporting mechanisms. Together with our suspicious order monitoring systems, it enables risk mitigation.

Quality and product safety expectations are intensifying globally from a variety of stakeholders. There is now a greater emphasis on companies taking responsibility for their supply chains, data integrity and quality assurance, priorities we have embraced for many years.

Falsified medicine – medicine that is sold as authorized, authentic medicine but in fact contains ingredients of bad or toxic quality or dosage – continues to be an issue for the pharmaceutical industry. We have made significant investments in packaging and information technology to enhance product safety. By lowering the likelihood that falsified products will enter our supply chain, we are helping to ensure that the integrity of the product is not impacted and to enhance product safety as well as ensure access to high quality medicine. The company has global policies to govern validation, operations, serialization and product security. New and updated procedures have also been implemented across all manufacturing sites to drive consistency in packaging, management, master data and distribution of serialized product. Among these are processes to track and trace serialized products. An internal product safety group helps monitor the supply chain to help ensure it is not breached.

Serialization

Serialization is a process that helps companies obtain valuable information about the products they sell, and where they are made and shipped. It is fueled by myriad government regulations that require pharmaceutical companies to track their products along the supply chain and verify their authenticity. The goal of serialization is to ensure that medicines reaching consumers are not counterfeit, stolen or contaminated. Our quality, regulatory and serialization teams work to ensure that serialization requirements for all countries are met. In doing so, the company works closely with industry groups such as the RxGPS Alliance, a group of multinational pharmaceutical supply chain stakeholders who have a common interest in advancing global alignment of drug serialization and tracing requirements to harmonize various standards among countries.

Serialization efforts include technology that uniquely numbers each pack and places a serialization mark, known as a 2D data matrix, on products. We work internally and externally (with contract manufacturers) to ensure that products made for patients include these identifying marks. Eventually, the serialization process will leverage aggregation, which places a unique code on shippers of our products. This code will associate data for each individual product packaged within it, creating a parent-child relationship. Aggregation will facilitate the efficient flow of products in the supply chain.

Once products are serialized, our work continues. Large amounts of data created by serialization must be managed, maintained and reported to authorities or trading partners. In the near future shipments to customers will also include serialization data. This new way of conducting business is driving the digital supply chain with emphasis on data integrity.

Our serialization program is an important aspect of the digitization of the global pharmaceutical supply chain that will eventually connect manufacturers, wholesalers, dispensers, patients and regulators. This digitization starts with enabling serialization during packaging and leveraging this data throughout the supply chain to secure product delivery.

2020 highlighted the diverse strategies that different governments are pursuing to address counterfeit medicines and secure the associated supply chains. For global manufacturers, this presents challenges as each market develops unique requirements. Various versions of track & trace and endpoint authentication have emerged around the world, and we are working hard to meet these requirements to ensure access to high-quality, affordable and authentic medications.

Integration of legacy Upjohn products into the Viatris serialization architecture is well underway and will integrate seamlessly into our industry leading solution.

STAY CONNECTED:

Working for a Global Stable Supply of Medicine[3]

Providing secure access to medicines for patients around the world requires an interconnected, global supply chain. We are committed to leveraging our diversified global supply chain to meeting the needs of patients. Our broad network of manufacturing facilities across the globe helps to provide significant supply chain resiliency and uninterrupted patient access to medicines. No single country or company can meet the needs of all patients – we are stronger together and are committed to serving patients in more than 165 countries around the world.

Our more than ~50 manufacturing sites across more than 15 countries, combined with our global supply chain network and the facilities of the many partners with whom we collaborate on manufacturing, development, supply and logistics offer a worldwide, strategically located network of robust size and scope. 600 third parties augment our internal capacity and capabilities.

FLEXIBILITY AND PROXIMITY TO CUSTOMER

- Global sites qualified to supply globally and locally
- Regional manufacturing and packaging sites enabling benefits of centralization, while allowing rapid regional supply
- Local manufacturing in markets that have unique in-country requirements
- "Last mile" distribution presence in 60+ countries with over 190 distribution centers

From an API point of view, not only are we vertically integrated for several key products, but we have also built strategic partnerships with our API suppliers and built-in redundancies to mitigate disruption. Approximately half of our API comes from India and China, and the other half from North America, Europe, and emerging markets. In India, we have more than 15 manufacturing facilities located in five different states, which mitigates risk of disruption in any given part of the country.

- 20 countries supply top 100 products from 80 different locations. Many products registered at multiple sites, offering risk mitigation and flexibility to meet demand
- 50% of top 100 products dual sourced for API and/or finished product
- 18 countries supply API for top 100 products

The company's global supply chain is strategically designed to support the continued growth of our business and to protect the quality and safety of our diverse and increasingly complex products.

We are continuously monitoring our inventory levels of our raw materials and dosage forms, and currently are in a strong position from a supply point of view to meet our customer needs across the globe.

Designed to reach more patients with more solutions when and where they need them, our regional supply sites are often in close proximity to our key markets and utilize demand and supply data to leverage capabilities and create efficiency and flexibility across our operations We have a Rapid Response Advanced Planning system, which is a state-of-the-art technology for supply chain planning and management. The program enables key stakeholders to be closely connected across our global operations. It enables us to update and share information in real time, allowing us to leverage capacities and resources across key functions such as commercial, supply chain, warehousing and manufacturing. We look out over a 24-month horizon and plan supply to meet both the forecast and safety stock requirements to buffer against any potential fluctuations in demand or supply.

Tackling Medicine Shortages

Drug shortages are a challenge across the globe, with several causes that are in some instances very complex. This was especially true in 2020 amid the COVID-19 pandemic as countries closed their borders and enforced lockdowns, requiring increased collaboration with industry and governments to mitigate the impact on patients and find solutions.

The demands of the pandemic added to an already strained system, where global demand for medicine is increasing significantly, putting extra pressure on manufacturers and supply chains to produce and supply products around the globe. At the same time, governments all over the world are facing the urgent need to manage spending amid increasingly tight budget constraints.

Generic medicines have proven to be important in addressing both challenges: Generics lower the cost of medicine through increased competition in the marketplace with increased availability of treatments. However, manufacturers are facing increasing regulatory complexity and costs, as well as, volatile demand and procurement models that often only look at lowest price. The combination can be difficult for industry to manage while pursuing the mission of access.

Tackling medicine shortages in a multi-source context requires a holistic approach that addresses both the root causes of the problem while also mitigating the impact when a shortage occurs.

STAY CONNECTED:

This includes addressing the economic causes of shortages to ensure market predictability and healthy competition and also improving regulatory efficiency and managing supply chain information.

We have been actively engaged in drug shortage task forces initiated by health authorities to provide context of the supply chain dynamic that can be causing increased drug shortages and potential solutions to minimize shortages. We are also working with a variety of stakeholders to find a holistic and long-term solution to ensure continued supply and access to medicines.

Distribution

The company's products make their way to patients through a variety of distribution channels and intermediaries, and local laws and customs give rise to different types of pharmaceutical markets (distribution, tender, substitution and prescription). The customers we work with include retail pharmacies; specialty pharmacies; wholesalers and distributors; payers, insurers and governments; and institutions such as hospitals, among others. We work closely with them and other important collaborators including NGOs, to help create better health by making our products available to patients in countries with varying degrees of income and resources.

View the full Viatris 2020 Sustainability Report

Related Sources

[1] ICH Quality Guidelines

[2] Refers to legacy Mylan

[3] Presents Viatris 2020 performance. Data as of December 31, 2020 and does not include impact of previously announced global restructuring program

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