

Final Concept Paper
Q10 : Pharmaceutical Quality Systems¹
dated 9 September 2005
Endorsed by the ICH SC on 10 November 2005

I. Type of Harmonisation Action Proposed

It is proposed a new tripartite guideline be developed describing the modern quality systems needed to establish and maintain a state of control that can ensure the realisation of a quality drug product and facilitate continual improvement over the life cycle of a drug product. It is anticipated the guideline will augment existing GMPs with modern quality system elements for pharmaceutical manufacturing, providing the opportunity for robust processes, resulting in drug substances and drug products that consistently meet their intended attributes. There are several precedents of documents that define quality systems:

- ISO 9000: “Quality Management Systems”-- fundamentals and vocabulary
- ISO 9001: 2000: “Quality Management Systems”-- requirements
- ISO 9004: “Quality Management Systems” -- guidelines for performance improvements
- Eudralex Volume 4: “Medicinal Product for Human and Veterinary Use: Good Manufacturing Practice”
- ICH Q7a: “Good Manufacturing Practice Guidance for Active Pharmaceutical Ingredients”
- US FDA: “Draft Guidance for Industry Concerning Quality Systems Approach to Pharmaceutical current Good Manufacturing Practice Regulations”
- ISO 13485: 2003 Medical devices -- Quality management systems; Requirements for regulatory purposes

Starting with the elements described in these documents, the proposed ICH Quality guideline would serve as a bridge between different regional regulations, thereby helping to achieve global harmonization of quality systems. It is also anticipated this proposed ICH guideline will focus on quality systems that facilitate implementation of ICH Q8 “Pharmaceutical Development” and ICH Q9 “Quality Risk Management”, thus enabling the realization of the full benefits of the concepts contained within these two guidelines. This guideline would apply to pharmaceutical drug substances and drug products throughout the product lifecycle, including process development, technology transfer and routine manufacturing.

II. Statement of the Perceived Problem

Currently, there are differences between industry and regulatory agencies in the different regions in the definition and interpretation of quality system terms, principles, application and expectations. Therefore, while the three regions are using various aspects of quality systems and concepts, a strong potential exists for further divergence. This divergence can occur in expectations and interpretations as the quality systems evolve, especially when implementing quality by design, continual improvement and quality risk

¹ In June 2006, the Q10 name was changed from GMP Quality Systems to Pharmaceutical Quality Systems.

management. This divergence is not in line with the need for an efficient and effective industry and regulatory processes.

The absence of an internationally harmonized pharmaceutical quality systems guideline that manufacturers can use in assessing their process, products and systems can have the following impact on the patient, regulator and/or industry:

- Fragmented or fundamentally divergent approaches to quality systems are likely.
- Suboptimal deployment of limited resources to identify, enact or support effective elements of a quality system and continual improvement by both industry and regulatory agencies.
- Delays may occur in the availability of medicines to patients around the world.
- Delays in the implementation of innovation and continual improvement for existing products may occur due to different expectations in the three regions.
- Delays in the launch of new products.
- Different approaches between the three regions to compliance inspections.
- Impediments to moving within pharmaceutical manufacturing and associated regulatory processes towards implementing a culture of quality by design, right first time and continual improvement, as practiced within other industries.

III. Issues to be Resolved

The following issues will need to be resolved:

- Define Terminology: The pharmaceutical context for the structure, terminology and concepts contained within ISO 9001 and associated documents will be established.
- Definition of the Quality Management System: The elements from ISO 9001 and 9004 standards will be used as the key elements for the foundation of a pharmaceutical Quality System which will complement existing GMPs. These will characterise how modern and robust quality systems interact to promote continual improvement over the life cycle of the product.
- Definition of Product Realisation: Concepts discussed in ICH Q8 will be strengthened and complemented by including expectations for this system to bridge development and manufacturing and cover manufacturing activities for the entire product life cycle including a risk based change management system. This is not only for the new products to be developed under ICH Q8 and ICH Q9 concepts but also for existing products, and will include Q6A concepts.
- Definition of Measurement, Analysis and Improvement: The tools necessary for an effective quality system include not only the gathering of the correct data but the analysis of the data and its use in defining and prioritizing continual improvement activities. The tools to be discussed include the validation approach, statistical process control, process analytical technology, quality planning, determining correct root causes and identifying effective preventive actions and managing change to materials, processes, products, equipment and systems in an overall manner. The outcome of this work may have an impact on the development of future regulation.

IV. Background to the Proposal

At the ICH meeting in Brussels in July 2003, a consensus vision statement was developed and adopted by all parties and observers involved

“Develop a harmonized pharmaceutical quality system applicable across the life cycle of the product emphasizing an integrated approach to quality risk management and science.”

It is anticipated the guideline as described above will have many potential benefits, if implemented:

- Harmonize the concept of quality systems for pharmaceutical industry between the three regions.
- Enable the potential benefits from ICH Q8, ICH Q6A and ICH Q9 to be fully realized.
- Encourage industry to improve manufacturing processes thus reducing undesired variability and leading to a more consistent product quality, improved process robustness and more efficient processes.
- Demonstrate industry and regulatory commitment to robust quality systems and technical innovation and enhance assurance of consistent availability of medicines around the world.
- Facilitate innovation and continual improvement as defined in this guideline throughout the whole product life cycle.
- Provide the link between development and routine manufacturing to ensure systems are in place to ensure and to give confidence that the correct decisions are made by industry to manage changes, both within and outside of the design space.
- Facilitate management commitment to quality.
- Encourage a science and risk based approach to quality decisions.
- Encourage a preventive action culture, which ensures actions are taken before a problem/issue arises.
- Improve quality monitoring and review (e.g. data evaluation, statistical process control and process capability measurements), which form the basis for continual improvement of processes.
- Provide greater assurance there is no unintended consequence as a result of continual improvement activities.

V. Type of Expert Working Group

Because of the broadness and complexity of the guideline and as this guideline will be applicable over the life cycle of the product, it is important that EWG members have expertise in quality systems, compliance, pharmaceutical development, and manufacturing. In order to have the appropriate expertise and to keep the size of the EWG manageable, it is suggested that each ICH partner have the flexibility to nominate up to three experts to allow for a broad range of subject expertise to be adequately represented. The core group would be comprised of these nominees from each of the ICH parties and one representative from each observer (including EFTA, IGPA, WSMI, WHO, and Canada).

Because of the broadness and complexity of the guideline, EWG will revisit this concept paper 6 months after the first EWG meeting

Timing

Adoption of topic by Approval of ICH Steering Committee
to develop concept paper

May, 2005

Approval of Concept Paper by Steering Committee

September 2005

First EWG – Chicago, USA

November 5-10, 2005

Second EWG –Yokohama, Japan

June 2006

Adoption of Step 2 Document

Spring 2007