INNOVATION. QUALITY. GLOBAL REACH.

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Revised Schedule M:
Driving Regulatory Harmonization

Schedule M and Beyond

A Paradigm Shift for Scalable Growth

MOVING TO THE DESIRED STATE

S.M. MUDDA
Chairman Regulatory Affairs, IDMA , Mumbai
Managing Director, Misom Labs Ltd., Malta
23.10.2024

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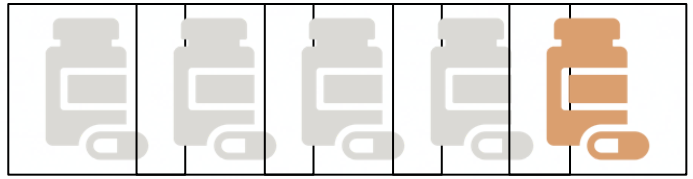
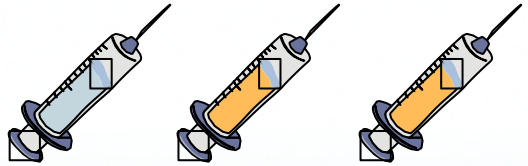
India – A Global Supplier of Quality Medicines





1 IN 5 PILLS USED WORLDWIDE

2 IN 3 VACCINES USED WORLDWIDE

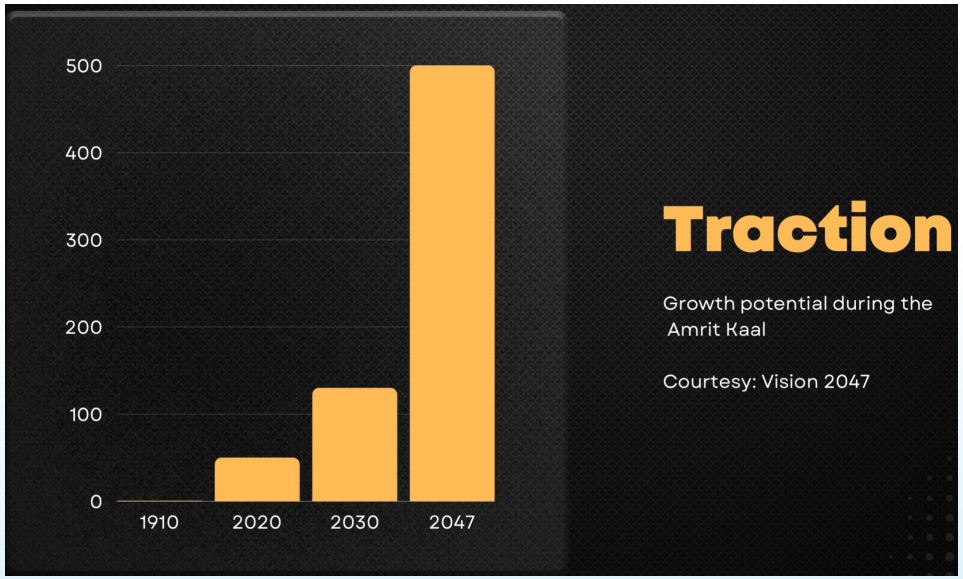
HIGHEST NO. OF GMP CERTIFIED UNITS

MOST AFFORDABLE MEDICINES

Courtesy : Dr, Viranchi Shah president@idmaindia.com

A Commitment to Global Quality Standards

- India Pharma is continuously evolving to meet the ever increasing demands of international markets.
- The up-gradation of India's Revised Schedule M is a moment of pride and progress for the Indian pharmaceutical sector and demonstrates our *unwavering dedication to patient safety and welfare.*



Courtesy : Dr, Viranchi Shah president@idmaindia.com

Globally Harmonized PQS: The Foundation of Schedule M

The revised Schedule M invites us to embrace a more holistic and proactive approach to Quality Management encompassing the entire product lifecycle

It is not about revised GMP standards but about creating and implementing a **Pharmaceutical Quality System (PQS)** for a sustainable and scalable compliance with GMPs

Globally Harmonized PQS: The Foundation of Schedule M

It represents a significant leap toward harmonizing Indian pharmaceutical manufacturing practices with internationally accepted quality systems and reinforces our commitment to quality, safety, and excellence.

The harmonisation will :

- Provide India a competitive advantage in the global supply chain
- Enhance Product Quality, safety and efficacy
- Improve access to global markets
- Build confidence and trust in our medicines

Our Journey from GMP to PQS

IPA Annual Conference , Chennai, 2009

Key Drivers

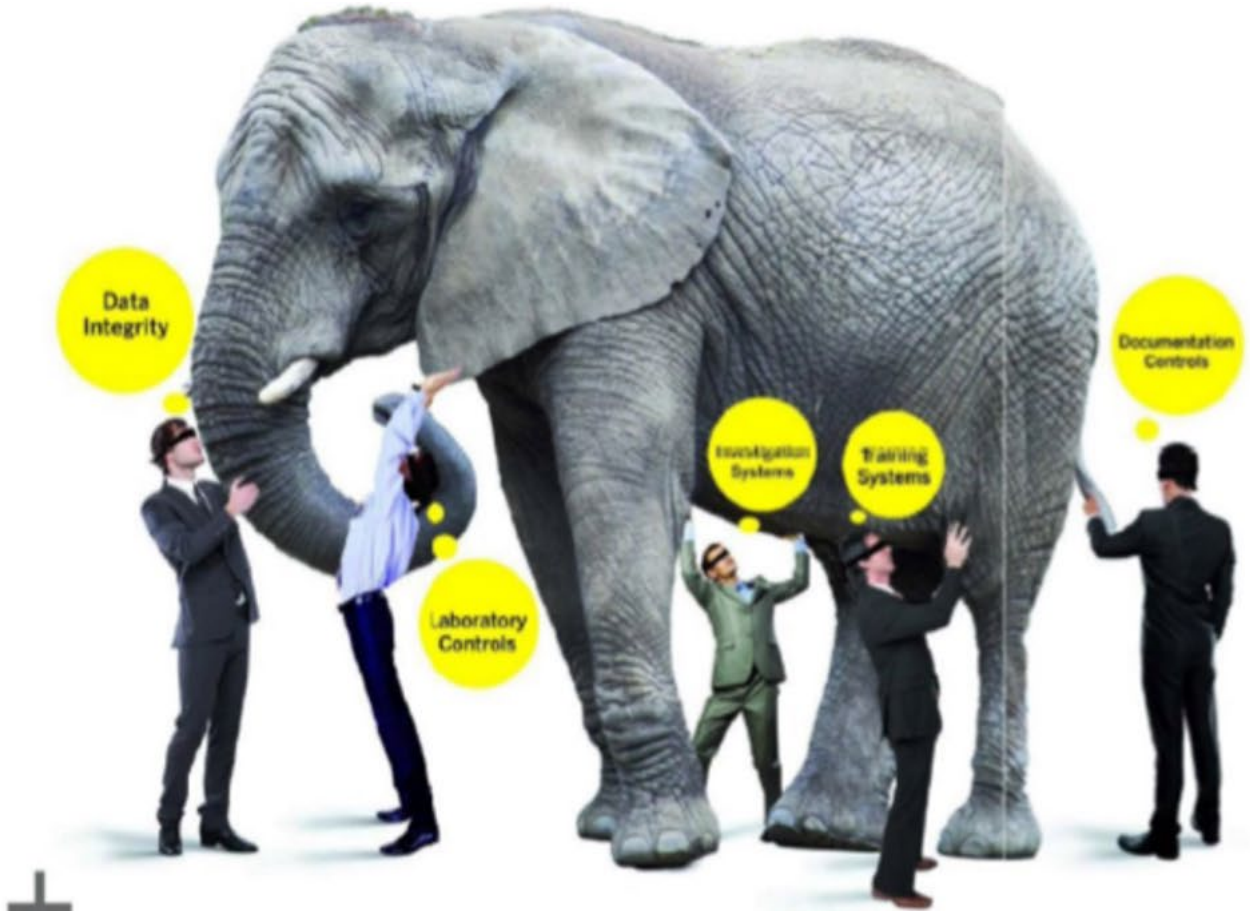
1.Design and maintenance of GMP compliant manufacturing facilities meeting global regulatory expectations.

2.Introduction of company's Quality Management System consistent with Global regulatory requirements and customer expectations.

3.Managing formulation development and Technology transfer by following the concepts of Quality by Design and finally

4.Adopting Quality Systems and Risk-based approach for implementation of cGMPs

Our Journey from GMP to PQS



ARE WE GRAPPLING SKEWED PERCEPTIONS OF GMP?

Indian Pharma Inc's waking up to the importance of GMP compliance and it has become a top priority in board room meetings but there is a need to go beyond 'checking the boxes' and address the root cause to ensure adherence to global quality guidelines

People need to be Reminded *more than*

they need to be Instructed

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Our Journey from GMP to PQS

GMP CERTIFIED + Marketing Authorizations, ANDAs 

= Product Quality 

GMP as the name suggests is a practice and Practices are followed by tradition

"How" of a practice is known while "why" is rarely known

Risk-Averse, Compliance- oriented, Short term

Contributing factors - more Behavioural than Technical

Pharmaceutical Quality System- The Philosophy behind the Practice

The only problems that have simple solutions are simple problems

Need to Develop higher order of Thinking (Consciousness)

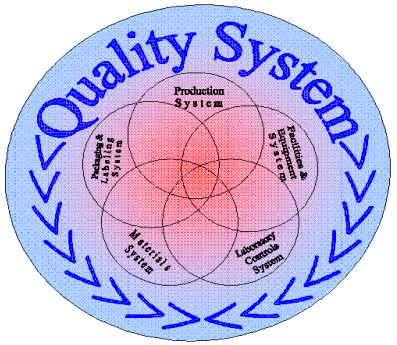
- *Ref.Books/Articles: W.E.Deming, Daniel Kahneman, Robert Kegan, Russel Akoff, Dave Snowden.....*

Our Journey from GMP to PQS

Determination of Quality by Testing

Inspection - oriented, Risk – averse Compliance

Assurance of consistent Quality, Safety & Efficacy



The foundation for consistence GMP Compliance

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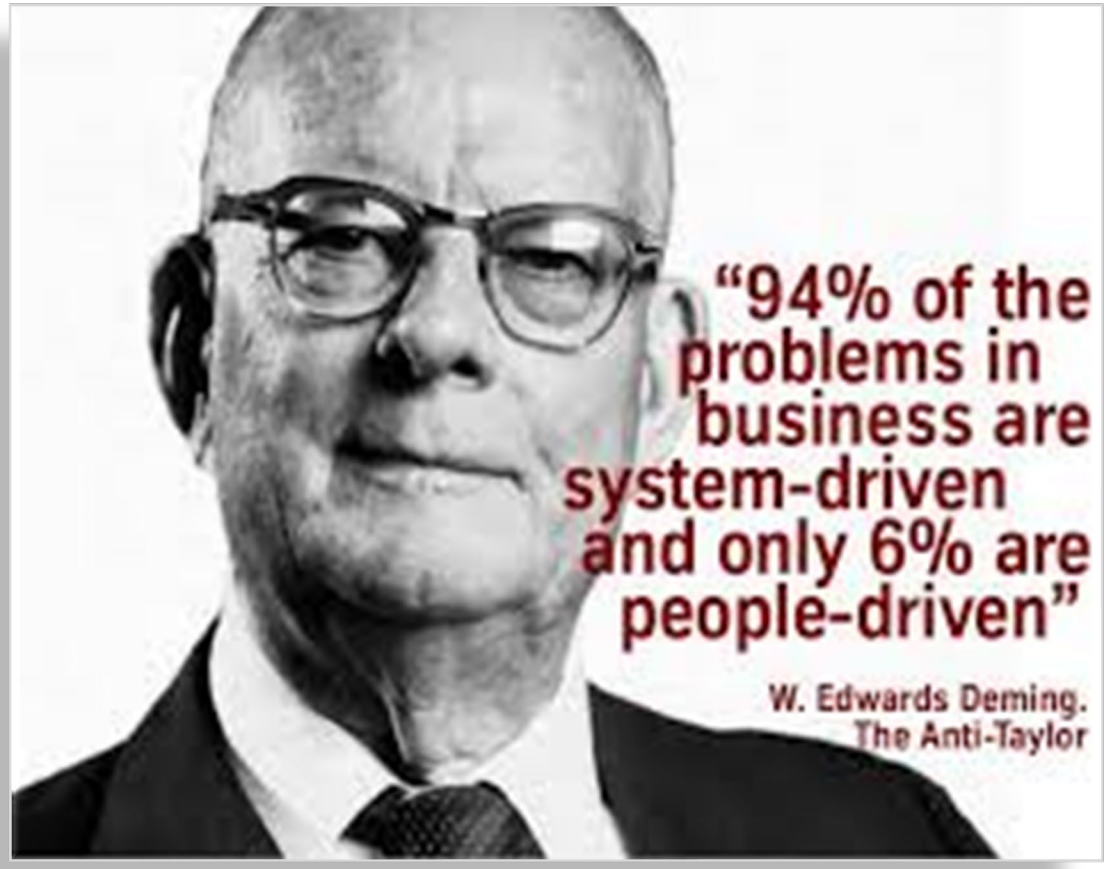
Pharmaceutical Quality System- The Philosophy behind the Practice



Adoption of

QUALITY-SYSTEM BASED AND RISK-BASED APPROACH

for a

SUSTAINABLE AND SCALABLE GMP COMPLIANCE

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REVISED SCHEDULE M

PQS – THE FOUNDATION OF SCHEDULE M

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REVISED SCHEDULE M

A LIST OF CHANGES

Cl.No.	Revised Schedule M	Clause No.	Existing Schedule M
1	Pharmaceutical Quality System	NA	Not Applicable
2	Quality Risk Management	NA	Not Applicable
3	Good manufacturing practices for pharmaceutical products:	NA	Not Applicable
4	Sanitation and hygiene	29.5	Sanitation
5	Qualification and validation:	26	Validation and process validation
6	Complaints and adverse reaction	28	Complaints and Adverse Reactions.
7	Product recalls	27	Product Recalls.
8	Change control	NA	Not Applicable
9	Production under loan licence or contract and contract analysis and other activities:	29.9	Loan license manufacture and licensee
10	Self-inspection, quality audits and suppliers' audits and approval	29.11	Self-inspection.

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REVISED SCHEDULE M

A LIST OF CHANGES

Clause No.	Revised Schedule M	Clause No.	Existing Schedule M
11	Personnel	6	Personnel.
12	Premises	29.3	Premises
13	Equipment	29.4	Equipment
14	Materials	NA	Not Applicable
15	Reference Standards	NA	Not Applicable
16	Waste materials	NA	Not Applicable
17	Documentation	12	Documentation and Records.
18	Good practices in production	NA	Not Applicable
19	Good practices in quality control	NA	Not Applicable
20	Computerised systems	NA	Not Applicable

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PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

1.DESIGN AND IMPLEMENTATION OF PQS INCORPORATING GMP AND QRM

PHARMACEUTICAL QUALITY SYSTEM- This is a wide-ranging concept concerning all matters that individually or collectively influence the quality of a product.

The manufacturer must assume responsibility for the quality of the pharmaceutical products

To achieve this quality objective reliably there must be a comprehensively designed and correctly implemented pharmaceutical quality system incorporating Good Manufacturing Practices (GMP) and Quality Risk Management (QRM).

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

Quality management, therefore, incorporates Good Manufacturing Practices and other factors, including those outside the scope of this Part, **such as Product Design and Development.**

Good Manufacturing Practices applies to the life-cycle stages from the

- Manufacture of Investigational Medicinal Products,
- Technology Transfer, and
- Commercial Manufacturing, until the
- Product discontinuation.

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

2.MANAGEMENT RESPONSIBILITY

Senior management has the ultimate responsibility to ensure that an effective pharmaceutical quality system is:

- In place,
- Is adequately resourced, and that
- Roles, responsibilities, and authorities are defined, communicated and implemented throughout the organisation.

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

3. PRODUCT QUALITY SYSTEM - PRODUCT REALISATION - (Redefining Product Quality)

1.5 (a) product realisation is achieved by designing, qualifying, planning, implementing, maintaining and continuously improving a system that allows the consistent delivery of products with appropriate quality attributes;

(b) product and process knowledge is managed throughout all lifecycle stages;

(c) pharmaceutical products are designed and developed in a way that takes into account, the requirements of GMP and other GXPs such as those of Good Laboratory Practices (GLP) and Good Clinical Practices (GCP);

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

3. PRODUCT QUALITY SYSTEM - PRODUCT DESIGN & GMP

Assurance is built on the solid foundation of product design. In other words, even before manufacture, the safety, efficacy and stability of a product must be unambiguously established

GMP without product quality is futile; by the same token, a well-designed product can be ruined if GMP is not followed.

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PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

3. PRODUCT QUALITY SYSTEM - PRODUCT DESIGN & TECHNOLOGY TRANSFER

" WHAT IS EASY-IS-HARD
A lot of what is easy to do in a lab setting is hard to do in a large scalemanufacturing setting.

QBD and Technology Transfer

- Technology Transfer Challenges : The more information the better.
- In the absence of data; assumptions are made.

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

3. PRODUCT QUALITY SYSTEM - PRODUCT AND PROCESS MONITORING

1.5 (m) product and processes are monitored and the results taken into account in batch release, in the investigation of deviations and, with a view to taking preventive action to avoid potential deviations occurring in the future;

1.5 (o) regular reviews of the quality of pharmaceutical products are conducted with the objective of verifying the consistency of the process and identifying where there is a need for improvement;

1.5 (p) a state of control is established and maintained by developing and using effective monitoring and control systems for process performance and product quality;

1.5 (q) continual improvement is facilitated through the implementation of quality improvements appropriate to the current level of process and product knowledge;

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PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. PHARMACEUTICAL QUALITY SYSTEM (PQS)

1. Achieve Product Realization: *A New Aspirational Definition for Product Quality*

To establish, implement and maintain a system that allows the delivery of *products with the quality attributes* appropriate to meet the needs of patients, health care professionals, regulatory authorities and other internal and external customers.

2. Establish and Maintain State of Control:

Process Performance &Product Quality Monitoring System (PP&PQMS)for assurance of continued suitability and capability of processes.

3. Facilitate Continual Improvement:

The proposed Schedule M is aimed at achieving these objectives

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 1. MANAGEMENT REVIEW

1.6. There shall be periodic management reviews, with the involvement of senior management, of the operation of the product quality system **to identify opportunities for continual improvement of products, processes and the system itself.** Unless otherwise justified, such reviews shall be conducted at least annually.

Such Reviews shall include discussion on key elements of Quality system including trends such as Deviations, Change Control system, Quality Risk Management , Complaints, PQRs , Training, Key employee changes, variations to process and test methods etc.

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 2. PRODUCT QUALITY REVIEW SYSTEM

2.3. Product quality review-
2.3.1. Regular, periodic or rolling quality reviews of all pharmaceutical products, including products for export only, shall be conducted with the objective of verifying the **consistency of the existing process and the appropriateness of current specifications** for both starting materials and finished product, to highlight any trends and to identify product and process improvements.

Such Reviews shall include several items that can impact the ongoing compliance with quality attributes such as Starting materials , equipment , utilities, in-process checks, stability, complaints, changes made, to process, specifications etc.

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PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 2. QUALITY RISK MANAGEMENT

2.1 Quality Risk Management is a systematic process for the assessment, control, communication, and review of risks to the quality of the medicinal product. It can be applied both proactively and retrospectively.

2.2. Quality Risk Management shall ensure that the-
(a) evaluation of the risk to quality is based on scientific knowledge, experience with the process and ultimately links to the protection of the patient;

2.2. Quality Risk Management shall ensure that the-
(b) level of effort, formality and documentation of the QRM process is commensurate with the level of risk.

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 2. QUALITY RISK MANAGEMENT

- Quality Risk Management (QRM) should be seen as more than just following SOPs.
- Limiting it to a checklist approach misses its true purpose.
- Instead, QRM needs to be embraced across the entire organization ***as a way of thinking,*** guiding every decision and process to ensure quality and minimize risk..

The Risk Management **IS** about:
Knowing our processes (manufacturing and business),
Understanding what's truly important and not spending time on a low risk activity, process,event, or system

Risk Management does **NOT** provide an excuse not to do the right things nor find a way to not comply with applicable regulations.

P x D x S X **(A)**

PART I : GOOD MANUFACTURING PRACTICES FOR PHARMACEUTICAL PRODUCTS:

CLAUSE 2. QUALITY RISK MANAGEMENT (QRM)

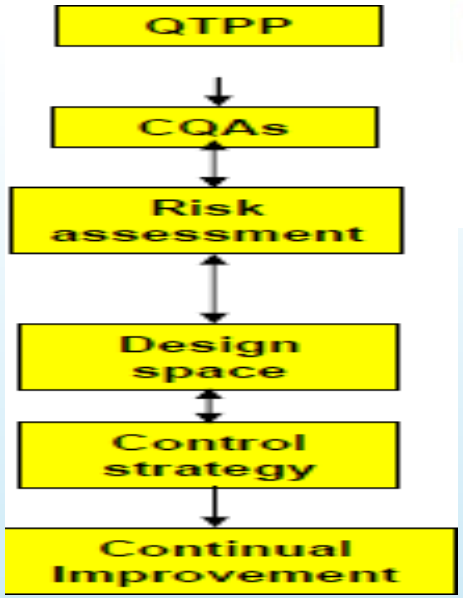
QRM – TRUST ENABLER BETWEEN THE INDUSTRY AND REGULATORS

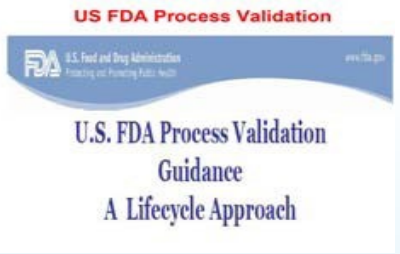
- The industry and the agencies world over are moving towards the desired state of continuous improvement and expect a good manufacturer to adopt the risk-based approach.
- The system of risk-based inspections has been adopted globally where the manufacturers are required to submit a GMP-Compliance report in advance that will be verified during the planned inspections

Revised Schedule M: Driving Regulatory Harmonization

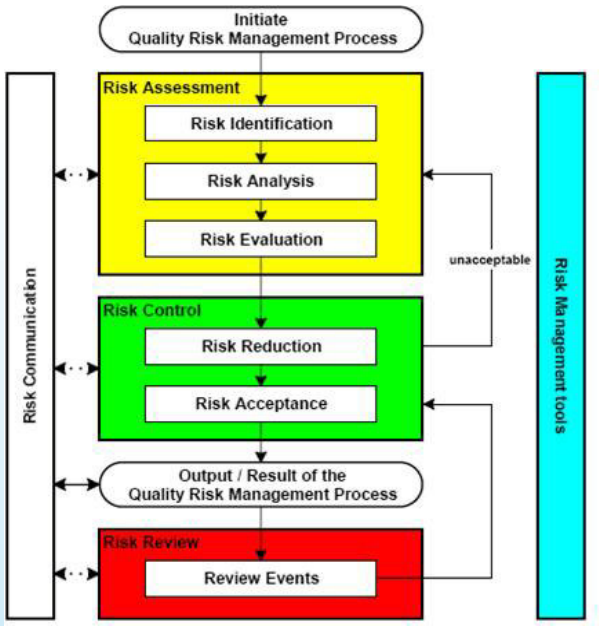
Product Lifecycle Approach for Quality : Integrating Product Design- Quality Risk Management – PQS

ICH Q8





ICH Q9



ICH Q10

Revised Schedule M: Driving Regulatory Harmonization

IDMA CDSCO COLLABORATION

Role of Senior Management

PQS, Second-Level Leadership-Systems and Processes

Revised Schedule M: Driving Regulatory Harmonization

Role of Regulators and Industry

Traditional Thinking Versus New Paradigm

Paradigm Shift
Fundamental change in an individual's or a society's view of how things work in the world

Industry → Regulatory Compliance
Regulators → Regulatory Compliance

Do more of the **same** because we have to!
Compliance-driven behaviour

Industry + TRUST + Regulators State & Central → Patient Safety

Do something **better** for patient benefit !
Patient-focussed behaviour

3

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IDMA Quality Initiatives

Organization of seminars and workshops for promoting Quality Management

IDMA-DOP Nation-wide Joint Seminars on GMP and Quality System for MSME Sector

- GMP WORKSHOP FOR SMES- SCHEDULE M & BEYOND 2015
- MEETING QUALITY CHALLENGES & ACHIEVING GLOBAL COMPLIANCE 2016

The seminars were conducted for the benefit of MSME sector in major cities as well as small towns including *Mumbai, Chennai, Hyderabad, Bangalore, Ahmedabad, Calcutta, Pondicherry, Nasik.*

IDMA has planned to conduct webinars and workshops for facilitating Compliance with the Revised Schedule M

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- IDMA Quality Initiatives – CDSCO IDMA JOINT WORKSHOPS
- Organization of seminars and workshops for promoting Quality Management

Topic	Place	Date
Product and Process Knowledge	Bangalore	25-05-2024
Pharmaceutical Quality System	Baddi	27-07-2024
Quality Culture	Daman	21-09-2024
Vendor Validation/Audit	Ahmedabad	30-11-2024
Good Practices in Production	Vizag	18-01-2025
Good Practices in Quality Control	Kolkata	29-03-2025

Revised Schedule M: Driving Regulatory Harmonization

Senior Management's leadership and strategic choices directly affect the values, priorities and day-to-day operations that define the culture of the manufacture units.

Culture eats strategy for breakfast

Peter Drucker

Role of Senior Management- Do's

A. Create a Quality Mindset

- Philosophy and Culture (PQS = BMS)
- Leadership at every level (Quality Owned by all)
- Continuous Quality Improvement

B. Build Capabilities

- Develop Organisation Fit for Purpose
- Provide Resources
- Excel at Education
- Proactive Risk Management

C. Systems & Process

- Intelligent Quality Standard
- Prevention and Improvement Focus (Focused on Prevention, Process Capability)

D. Create Positive Working Environment:

- 85% efficiency of the operating staff comes from the work environment and balance from his own skills

Role of Senior Management- Don'ts

Obstacles that stand in the way transformation

(Reference to Notes and Quotes from W Edwards Deming's Book OUT OF CRISIS)

Lack of constancy of purpose
Leadership does not Walk the Talk
No Message Credibility

Emphasis on short-term gain:
Profits follow good products

Performance–based evaluation: *Only Number –driven and not leadership-driven* performance stops long term planning and impacts teamwork.

Wrong Incentives:
Do not incentivise outcomes rather than the process adopted to achieve the outcomes

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Key Personnel and Pharmaceutical Quality System

Developing Second- Level Leadership For PQS

Current Leadership

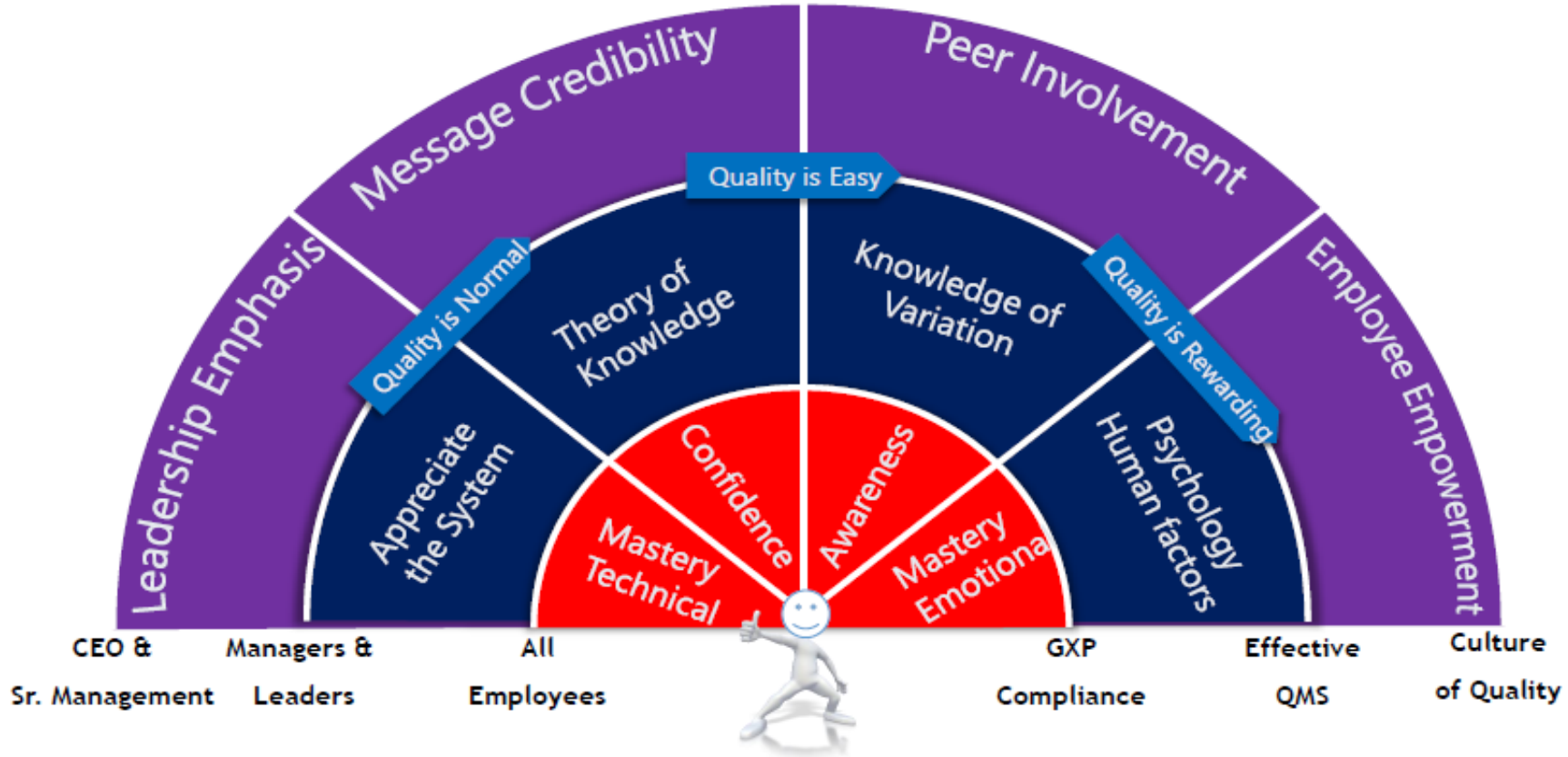
- *No formal education in best-in-class Quality Management Systems*
- *Traditional management approach*
- *Focus on Training-Not on Education*
- *Risk- Averse, Compliance-oriented and Reactive in Approach*

Future Leadership

- *Possesses Critical Thinking abilities*
- *The art and science of simplification*
- *Structured problem solving*
- *Risk-based decision making*
- *Empowered Systems Thinker*

Revised Schedule M: Integration of All Levels of the Organisation

- Systems thinking: System is the product of interacting parts; improving the parts taken separately will not improve the system



Revised Schedule M: Driving Regulatory Harmonization

- In closing, the harmonization of Revised Schedule M with global quality systems is a transformative step forward for the Indian Pharma industry
- It not only bolsters the global competitiveness of Indian manufacturers but also reinforces our commitment to ensuring the highest standards of patient safety, product quality, and operational excellence
- Adoption of system-based and risk-based approach driven by the top management commitment will make compliance with the revised Schedule M Normal, Easy and Rewarding and will help India Pharma achieve Quality Excellence
- As we embark on this journey of harmonization, I request all of us—regulators, industry leaders, and professionals—to continue fostering collaboration, sharing best practices, and building a pharmaceutical ecosystem that delivers safe, high-quality medicines to patients worldwide

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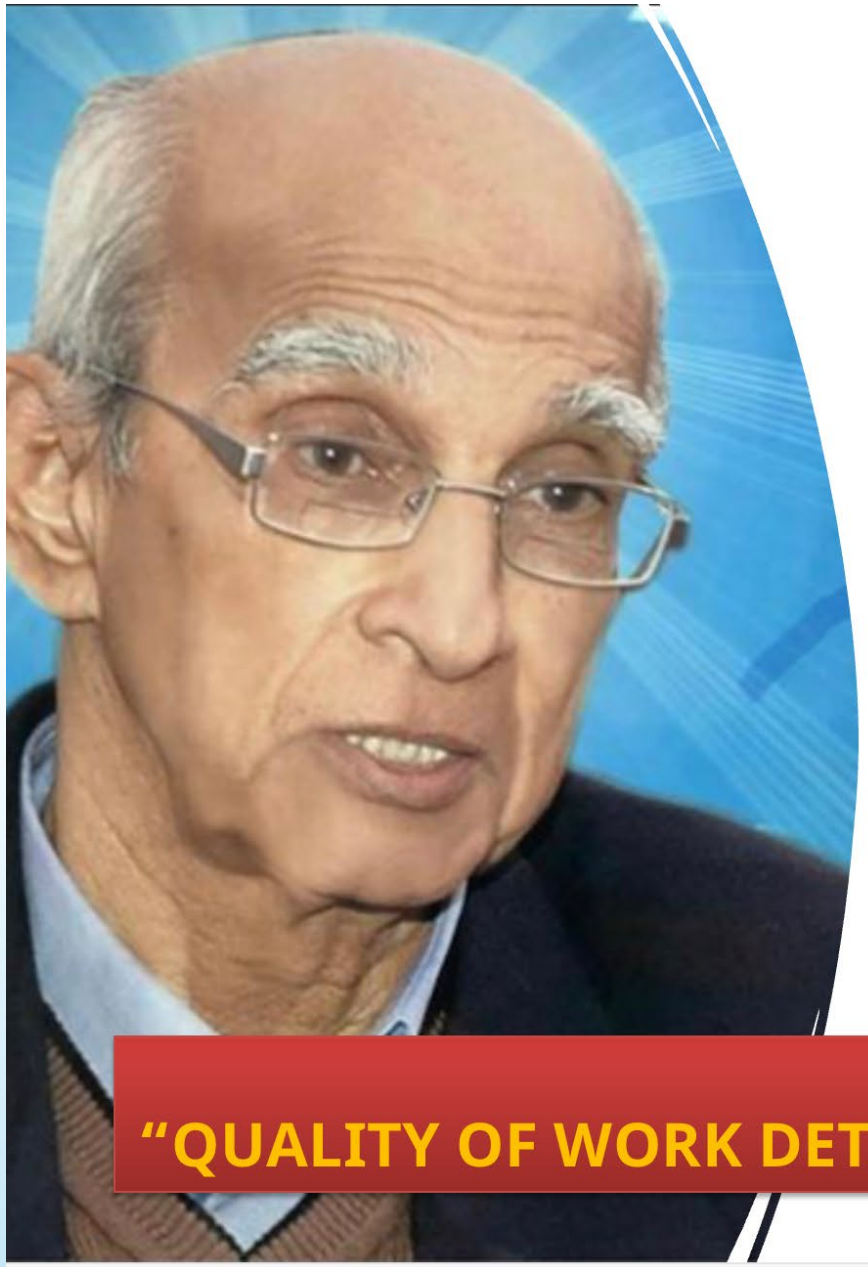

- **ACKNOWLEDGEMENT**
- **MR.R.S.IYER**
- ***THE QUALITY GURU***

"QUALITY OF WORK DETERMINES THE QUALITY OF PRODUCTS"

Revised Schedule M:
Driving Regulatory Harmonization

Thank You