

**How
current good manufacturing practices
(CGMP)
can assist in the availability of
“low cost pharmaceutical products of
assured quality”**

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Affordability and Quality

Affordability - The extent to which pharmaceutical products are available to the people who need them at a price they can pay.

Quality assurance - Is a wide-ranging concept covering all matters that individually or collectively influence the quality of a product.

It is the totality of the decisions made with the objective of ensuring that pharmaceutical products are of the quality required for their intended use.

Ref.: WHO-TRS 937, 40th Report, 2006

Matters that individually or collectively influence the quality of a product

1. Starting materials

- i. Active pharmaceutical ingredient (API)
- ii. Excipients
- iii. Primary container / closure

Findings:

- Lack of assurance from the real manufacturer
- Myth and reality of cost impact
- Sampling and testing practices

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Subgroup on non-OECD generic manufacturers

Matters that individually or collectively influence the quality of a product

2. Premises (WHO TRS 908, annex 4, 12.24)
 - i. Dedicated and self-contained
 - ii. Allows for the sequence of the operations
 - iii. Allows for the requisite cleanliness levels

Findings:

- Different interpretations of “self-contained”
- Lack of unidirectional flow
- Construction and materials difficult to clean

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3. HVAC (WHO TRS 902, 908, and 937)
 - i. ISO Class 8 (100,000) "at rest" for solids; & Class 5 (100) for injectables
 - ii. Design and location of supply air diffuser or UDAF and return air
 - iii. Pressure gradient & Number of air changes per hour

Findings:

- Limited number of plants in full compliance
- Some willing to comply (WHO TRS 937 and ISO 14644)
- Others facing major challenges for compliance

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4. Water for pharmaceutical use

- i. Drinking Water
- ii. Purified Water
- iii. Water for injection

Findings:

- Limited number of plants in full compliance
- Improper design and lack of qualification
- Happy to see WHO TRS 929, annex 3 and TRS 937

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5. Equipment

- i. Design and construction
- ii. Capacity
- iii. Maintenance

Findings:

- Some companies have well balanced process flow and equipment
- Others disregard critical aspects of the process

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6. Methods, Specifications & Sampling

- i. Above and beyond compendia
- ii. Limits (Alert and Action)
- iii. Rational for sampling

Findings:

- Comfortable with old compendia and tables
- Happy to see WHO TRS 929
- Willing to apply process capability (Cpk & Ppk)

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7. Qualification / Validation

- i. Design
- ii. Installation
- iii. Operational
- iv. Performance
- v. System Validation

Findings:

- Happy to see WHO TRS 937

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8. Training

- i. Program
- ii. Instructors
- iii. Records
- iv. Follow-up and re-evaluation

Findings:

- Proactive companies are far better than those that react to external audits and complaints

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How can low cost and assured quality be compatible?

- Managers believe that quality is essential
- Suppliers become partners for continuous process and quality improvement
- Evolve from pass-fail to quality indicators
- Eliminate reworks & rejections
- Select, train, empower, and retain qualified people