Qualification and Training to Support Annex 1

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PDA Parenteral Drug Association

2023 Annex 1 Workshop Series (Singapore)

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Topics

- Qualification – what is it?
- Four parts to qualification
- Applying the four parts to a real-life example: Gowning
- Retraining: be careful!
- Summary

- Appendix – listing of training requirements

"Qualification" of personnel

8.31 When inspection is performed manually, it should be conducted under suitable and controlled
should be appropriately controlled and
go visual inspection qualification (whilst
st annually. The qualification should be
er's defect library sets and taking into
speed where the product is transferred to
e) and should include consideration of

2 Principle

2.1 The manufacture of sterile products is subject to special requirements in order to minimize risks of microbial, particulate and endotoxin/pyrogen contamination. The following key areas should be considered:

i. Facility, equipment and process should be appropriately designed, qualified and/or validated and where applicable, subjected to ongoing verification according to the relevant sections of the Good Manufacturing Practices (GMP) guidelines. The use of appropriate technologies (e.g. Restricted Access Barriers Systems (RABS), isolators, robotic systems, rapid/alternative methods and continuous monitoring syste
increase the protection of the product from poten
endotoxin/pyrogen, particulate and microbial contamination
and the surrounding environment, and assist in the rapid dete
in the environment and the product.

ii. Personnel should have adequate qualifications and experience, training and behaviour with a specific focus on the principles involved in the protection of sterile product during the manufacturing, packaging

9.45 On completion of incubation:

i. Filled APS units should be inspected by personnel who have been appropriately trained and qualified for the detection of microbiological contamination. Inspection should be conducted under conditions that facilitate the identification of any microbial contamination.

7 Personnel

7.1 The manufacturer should ensure that there are sufficient appropriate personnel, suitably qualified, trained and experienced in the manufacture and testing of sterile products, and any of the specific manufacturing technologies used in the site's manufacturing operations, to ensure compliance with GMP applicable to the manufacture and handling of sterile products.

What is “qualified”?

Having the abilities, qualities, attributes, etc, necessary to perform a particular job or task.

(Source: Collins English Dictionary)

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Having the abilities, qualities, attributes, etc, necessary to perform a particular job or task.

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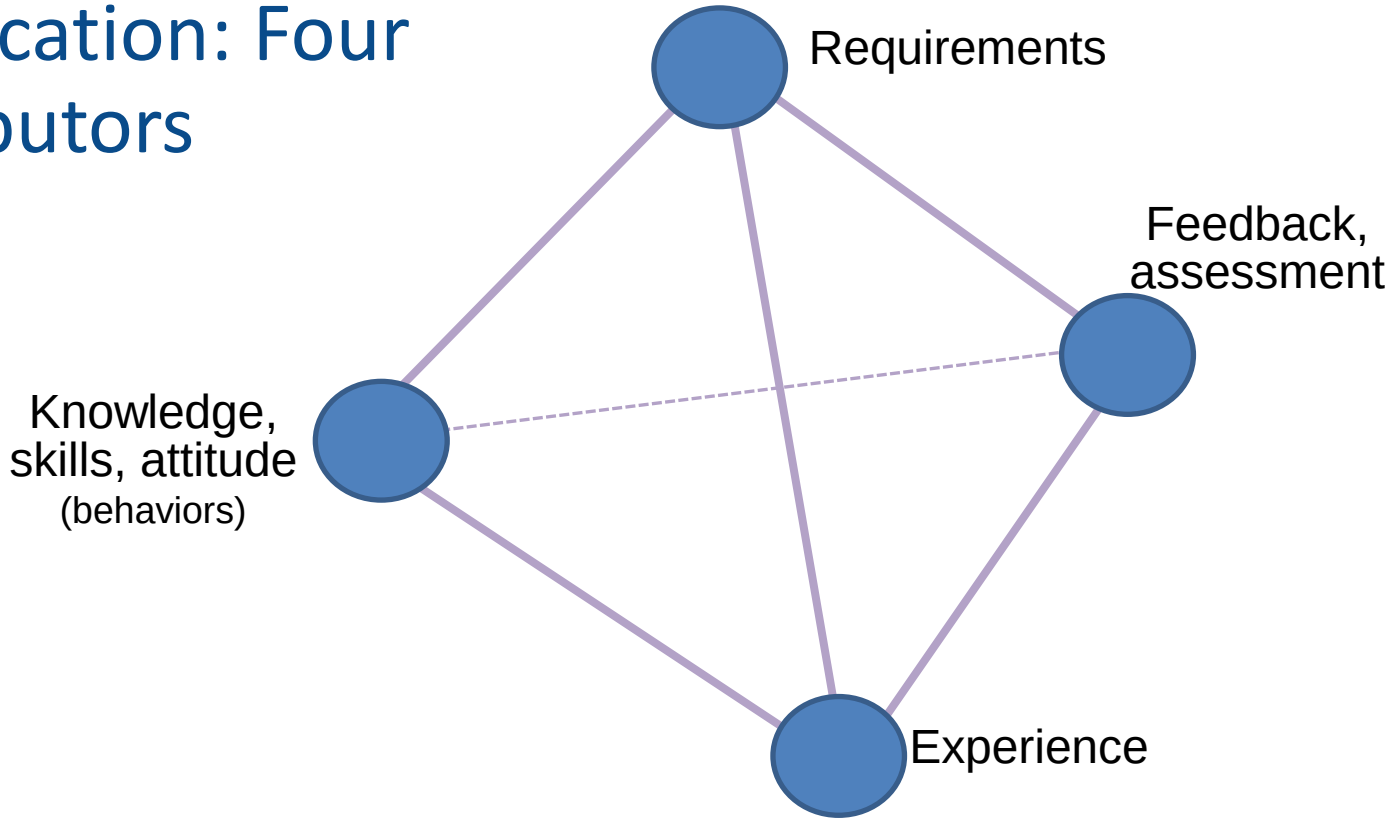
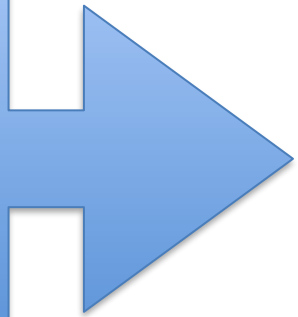
Qualification: Four contributors



Requirements

- Regulatory expectations (e.g., Annex 1, other GMP requirements)
- Job description ➔ Task description (e.g., SOPs, batch records)
- Individual's capabilities
- Fundamental competencies needed (e.g., aseptic technique, gowning)



- Course goal
- Learning objectives
- Topics to cover
- Instructional methods

Used in education, training, coaching & assessment

Appendix* – Annex 1 citations requiring "training" and/or "qualification" of personnel, 1

Reference	Topic	Requirement
2.1ii	Principles	Personnel should have adequate **qualifications** and experience, **training** and behaviour with a specific focus on the principles involved in the protection of sterile product during the manufacturing, packaging and distribution processes.
7.1	Personnel	The manufacturer should ensure that there are sufficient appropriate personnel, suitably **qualified**, **trained** and experienced in the manufacture and testing of sterile products, and any of the specific manufacturing technologies used in the site's manufacturing operations, to ensure compliance with GMP applicable to the manufacture and handling of sterile products.

(*A more complete list found at end of presentation)

Example of part of a curriculum

Source: www.sfsap.org

Aseptic Processing Sterilization Professional Learning Outcomes

DOCUMENT NUMBER: APSO001
Revision: 1

Framework Category / Module
Facility / operations / processing ***Aseptic technique and personnel behaviour (ATPB) (including first-air principles)***

Knowledge and skills required	Learning Outcome *(what person should be able to do with the knowledge and skills)*	Outcome met? Y/N	Comment
• Strong knowledge of capability, benefits and limitations of ATPB. • Strong knowledge of relationships between ATPB, contamination control, and aseptic process performance. • Knowledge of current compendial requirements, regulatory expectations, and current industry thinking, options, and practices related to ATPB.	• Provides input on the importance, value, and limitations of ATPB to sterility assurance of sterile dosage forms. • Applies risk-based assessments and thinking to identify potential risks and ways (controls) to reduce risks by using ATPBs. • Provides input and coaching on correct ATPBs to perform and incorrect ATPBs to avoid. • Provides training and coaching for clean room and aseptic processing personnel on first air principles, specific behaviors (e.g., minimizing movement and verbal communication, material/product handling) in order to minimize contamination. • Provides input on the frequency of training and personnel qualification, disqualification, and requalification regarding ATPBs. • Provides input for evaluation and responses to unplanned ATPB deviations, emergency interventions, and lapses in ATPB. • Provides input on what and how to include ATPBs into aseptic process simulations (“media fills”). • Participates in regulatory meetings and discussions concerning ATPBs.		

Knowledge, skill, behavior/attitude

- Knowledge: underlying principles, rationale achieved by education; ***WHY***
- Skill: the ability to do something, achieved through training and practice; ***HOW TO***
- Attitude: the way one thinks, feels, and behaves, achieved through watching, listening, participating that results in a positive ***behavior*** or performance; ***ORGANIZATIONAL CULTURE INTERNALIZED***
- K&S defined in education/training goals, learning objectives, topics covered

Experience

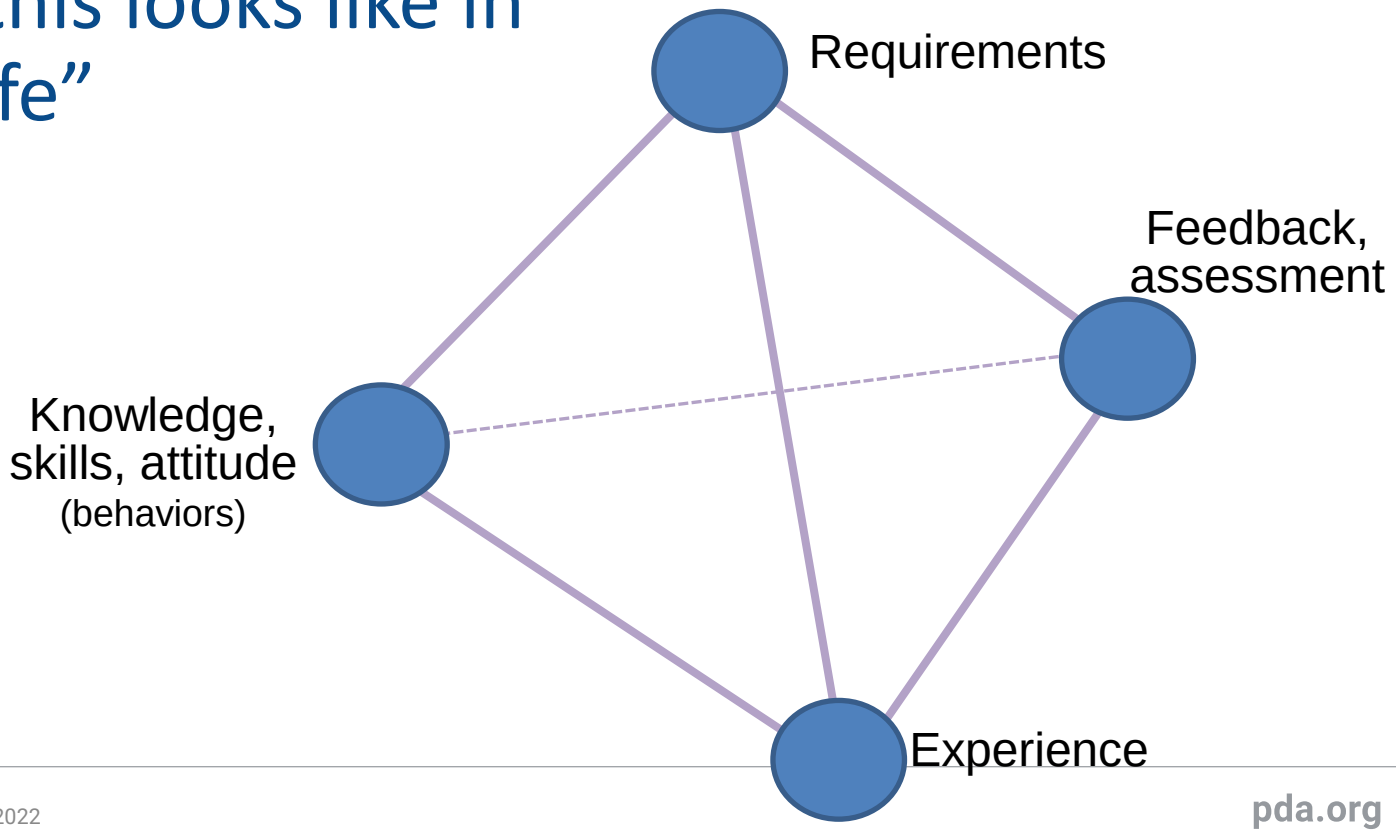
- Developing one's knowledge, skills, and expertise by being involved in real-life, actual situations
- Would include on-the-job training
- "Tacit knowledge" is acquired through practice and experience
- As more experiences are acquired, the more expertise (intuition, analytical skills) that is developed

Feedback, assessments

- **Formative** – helping a person improve: mentors, coaches, peers
- **Summative** – making a decision on a person's knowledge, skills, performance; having confidence that the person can perform safely and effectively
- **On-going assessments** – having continued confidence that the person can perform safely and effectively

- Learning objectives that define success are equivalent to specifications

What this looks like in "real life"



Example: gowning

- **Requirements** (Annex 1)
  - 7.3 All personnel… should receive regular training, gowning qualification and assessment in disciplines relevant to the correct manufacture of sterile products. This training should include the basic elements of microbiology and hygiene, with a specific focus on cleanroom practices, contamination control, aseptic techniques and the protection of sterile products (for those operators entering the grade B cleanrooms and/or intervening into grade A) and the potential safety implications to the patient if the product is not sterile…
  - 7.4 The personnel accessing grade A and B areas should be trained for aseptic gowning and aseptic behaviours. Compliance with aseptic gowning procedures should be confirmed by assessment and periodic reassessment at least annually, and should involve both visual and microbial assessment (using monitoring locations such as gloved fingers, forearms, chest and hood (facemask / forehead). See paragraph 9.30 for the expected limits).

Example: gowning

- **Knowledge, skills, behavior/attitude**
  - Learning objectives (examples)
    - Describe why garbing and gown is required in classified areas.
    - Given a map of the facility, identify the garbing and gowning required for entry.
    - Sequence the steps for garbing and gowning.
    - Describe the limitations of gowning.
    - Given the needed components for gowning in a Grade B area, completely gown three times correctly, each time passing personal monitoring.
    - Given a problem situation regarding gowning and garbing, correctly identify what actions should be taken.

Example: gowning

- **Experience**
  - On-the-job training
  - Identifying what can go wrong
  - Correctly responding if something is unusual or goes wrong

Example: gowning

- **Feedback / assessment**
  - Formative: coaching, ways to improve
  - Summative (demonstrating achievement of the learning objectives):
    - Correctly answering key questions about gowning
    - Successfully gowning according to local procedure, three times in given period
    - Successfully passing EM tests
  - On-going
    - Successfully gowning according to local procedure
    - Successfully passing EM tests
    - Not being disqualified

Be careful about "retraining" – use ***only*** when the root cause is a lack of knowledge or skill

9.46 vi. Where the root cause investigation indicates that the failure was related to operator activity, actions to limit the operator's activities, until retrained and requalified, should be taken.

7.6 7.6 There should be systems in place for the disqualification of personnel from working in or given unsupervised entry into cleanrooms that is based on aspects including ongoing assessment and/or identification of an adverse trend from the personnel monitoring programme and/or after being implicated in a failed APS. Once disqualified, retraining and requalification should be completed before permitting the operator to have any further involvement in aseptic practices. For operators entering grade B cleanrooms or performing intervention into grade A, this requalification should include consideration of participation in a successful APS.

The need for thorough root cause investigations

The less that is known about an accident [or deviation] the more likely it will be attributed to "human error".

(Nancy Leveson, MIT) .

Summary

- Qualification – what is it?
- Four parts to qualification
- Applying the four parts to a real-life example: Gowning
- Retraining: be careful!

Questions for discussion

1. Will the revision to Annex 1 cause a change in your training and qualification program? If so, in what ways?

2. How does your firm currently qualify workers so you have confidence in their knowledge and skills? Do you see this changing?

3. What are the challenges you face in your training and qualification activities?

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Appendix 1 — Specific references to training and qualification

NOTE: Topics that would require training (e.g., examination of gowns when leaving a classified area) are not included in this appendix.

Appendix – Annex 1 citations requiring "training" and/or "qualification" of personnel, 1

Reference	Topic	Requirement
2.1ii	Principles	Personnel should have adequate **qualifications** and experience, **training** and behaviour with a specific focus on the principles involved in the protection of sterile product during the manufacturing, packaging and distribution processes.
7.1	Personnel	The manufacturer should ensure that there are sufficient appropriate personnel, suitably **qualified**, **trained** and experienced in the manufacture and testing of sterile products, and any of the specific manufacturing technologies used in the site's manufacturing operations, to ensure compliance with GMP applicable to the manufacture and handling of sterile products.

Appendix – Annex 1 citations requiring "training" and/or "qualification" of personnel, 2

Reference	Topic	Requirement
7.3	Personnel	All personnel including those performing cleaning, maintenance, monitoring and those that access cleanrooms should receive regular **training**, gowning **qualification** and assessment in disciplines relevant to the correct manufacture of sterile products. This **training** should include the basic elements of microbiology and hygiene, with a specific focus on cleanroom practices, contamination control, aseptic techniques and the protection of sterile products (for those operators entering the grade B cleanrooms and/or intervening into grade A) and the potential safety implications to the patient if the product is not sterile. The level of **training** should be based on the criticality of the function and area in which the personnel are working.

Appendix – Annex 1 citations requiring “training” and/or “qualification” of personnel, 3

Reference	Topic	Requirement
7.4	Personnel	The personnel accessing grade A and B areas should be **trained** for aseptic gowning and aseptic behaviours. Compliance with aseptic gowning procedures should be confirmed by assessment and periodic reassessment at least annually, and should involve both visual and microbial assessment (using monitoring locations such as gloved fingers, forearms, chest and hood (facemask / forehead). See paragraph 9.30 for the expected limits). The unsupervised access to the grade A and grade B areas where aseptic operations are or will be conducted should be restricted to appropriately **qualified** personnel, who have passed the gowning assessment and have participated in a successful APS.

Appendix – Annex 1 citations requiring “training” and/or “qualification” of personnel, 5

Reference	Topic	Requirement
7.6	Personnel	There should be systems in place for the disqualification of personnel from working in or given unsupervised entry into cleanrooms that is based on aspects including ongoing assessment and/or identification of an adverse trend from the personnel monitoring programme and/or after being implicated in a failed APS. Once disqualified, **retraining** and **requalification** should be completed before permitting the operator to have any further involvement in aseptic practices. For operators entering grade B cleanrooms or performing intervention into grade A, this **requalification** should include consideration of participation in a successful APS.

Appendix – Annex 1 citations requiring "training" and/or "qualification" of personnel, 6

Reference	Topic	Requirement
8.30	Finishing of sterile products / visual inspection	… A defect library should be generated and maintained which captures all known classes of defects. The defect library should be used for the **training** of production and quality assurance personnel. Critical defects should not be identified during any subsequent sampling and inspection of acceptable containers. Any critical defect identified subsequently should trigger an investigation as it indicates a possible failure of the original inspection process.

Appendix – Annex 1 citations requiring "training" and/or "qualification" of personnel, 7

Reference	Topic	Requirement
9.45	APS	Filled APS units should be inspected by personnel who have been appropriately **trained** and **qualified** for the detection of microbiological contamination. Inspection should be conducted under conditions that facilitate the identification of any microbial contamination
9.46vi	APS failures	Where the root cause investigation indicates that the failure was related to operator activity, actions to limit the operator's activities, until **retrained** and requalified, should be taken.

Appendix – Annex 1 citations requiring “training” and/or “qualification” of personnel, 8

Reference	Topic	Requirement
10.1	Quality Control (QC)	There should be personnel available with appropriate **training** and experience in microbiology, sterility assurance and knowledge of the processes to support the design of the manufacturing activities, environmental monitoring regime and any investigation assessing the impact of microbiologically linked events to the safety of the sterile product.

Thank You