Using RM to establish product risk / benefit information

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AGENDA

- Risk / Benfit – Approach
- Risk / Benefit – What to Assess ?
- Risk / Benefit – When to Assess ?
- Risk Management Tool – FMEA
- Risk Management Plan – Risk Activities
- Hazard Identification – Baseline for Risk Activities

Risk / Benefit - Approach

Definition: ISO 14791 (current version)

- Risk / Benefit analysis is not required for every risk
- It is used to justify a risk once all practicable measures to reduce the risk have been applied
- If a risk is still not acceptable, the risk / benefit analysis is needed to establish whether the medical device (product) is likely to provide more benefit than harm

The decision as to whether risks are outweighed by benefits is essentially a matter of judgment by experienced and knowledgeable individuals

There is no standardized approach to estimate benefit

→ MDD requires to analysis for each risk and all residual risk

Risk / Benefit - Approach

Definition: ICH Q9 (current version)

- Risk / Benefit is not addressed as such

It is part of the Risk Control description

- Is the risk above an acceptable level?
- What can be done to reduce or eliminaae the risk?
- What is the appropriate balance among benefits, risk and resources?
- Are new risks introduced as a result of the identified risks beeing controlled?

Definition: GMP Annex 1(current version)

- Risk / Benefit is not addressed as such

Risk / Benefit – What to Assess ?

Assessment: involves

- Type of benefits – quality of lifes, impact on survival, preventing loss of function,
- Duration of effects – long term treatment effects
- Patient / HCP perspective of benefits – procedural time, training requirements, improved patient compliance

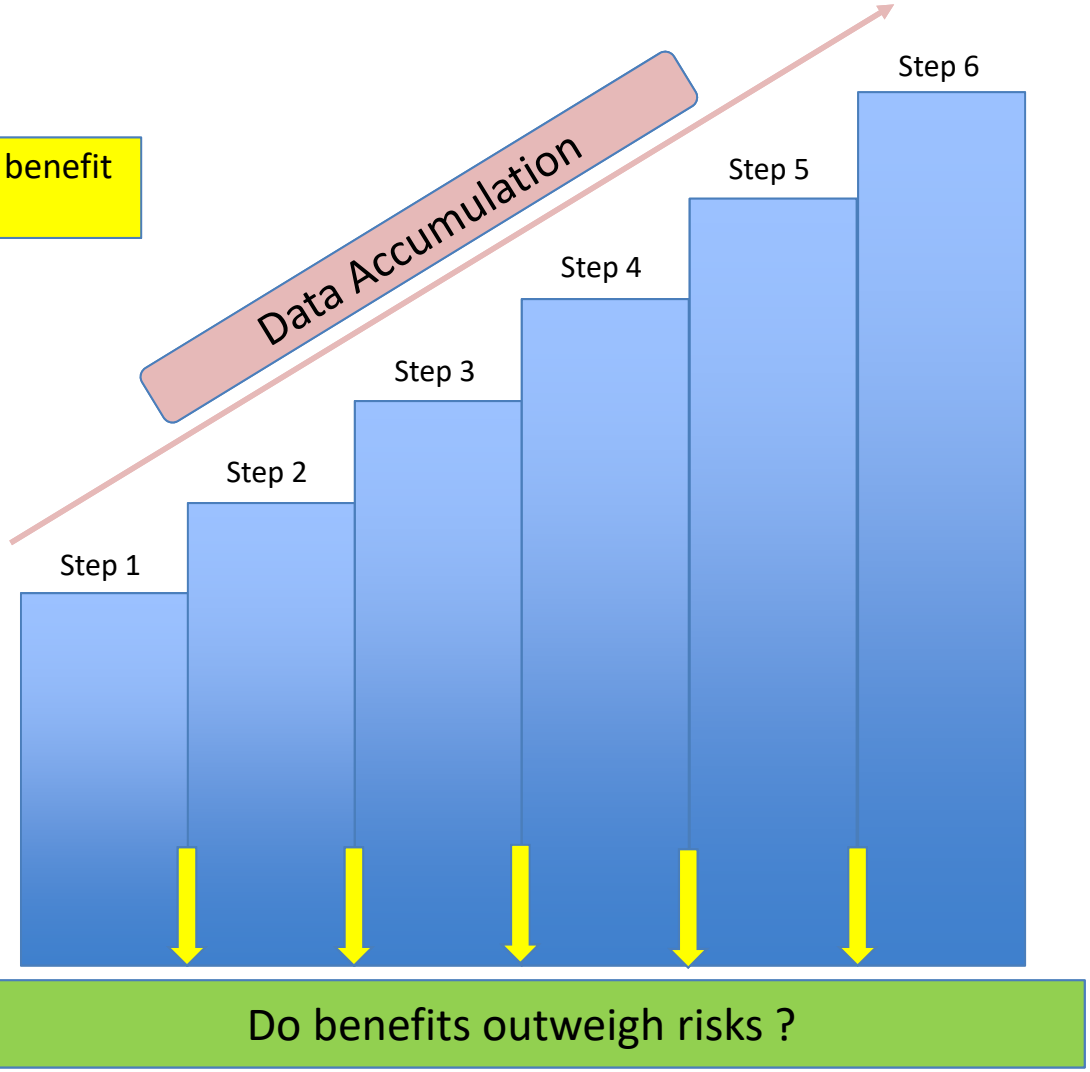
- Medical necessity – therapies, disease characteristics, prevention of disease progression

The assessment is a contiuous process through the product development cycle.

Analysis of accumulated data is necessary

Risk / Benefit – When to Assess ?

Time points for risk / benefit assessment



FMEA: Failure Mode and Effect Analysis

#	Component	Potential Failure Mode	Potential Effect(s) of Failure	SEV	Potential Cause(s) or Mechanism(s) of Failure	OCC	Current Design Controls	DET	RPN	Recommendation Actions	Action Results					
											Actions Taken	SEV	OCC	DET	RPN	Comments
1	Syringe Body	Syringe Breaks or Cracks	User frustration Product is not usable	4	Device dropped	2	General Design/Assembly Controls	1	8	Confirm that PFS device is able to withstand a drop from a counter or prep tray.	RR 32: PFS, with or without Secondary Packaging, shall be able to withstand a 1 meter drop onto a hard surface.	4	1	1	4	
2	Syringe Body	Syringe Breaks or Cracks	User frustration Product is not usable	4	Damage to device during shipping	3	General Carton Design	1	12	Confirm that PFS device is able to withstand air, sea, and land shipment, from manufacturing facility to final user destination.	RR 33: PFS in final packaged form, shall maintain product integrity and component position in air, sea, and land shipping configurations.	4	1	1	4	

Component / Potential Failure Mode / Potential (Effect) of Failure / SEV (Severity)

↳ Potential Causes or Mechanism of Failure / OCC (Occurence)

↳ Current design Controls / DET (Detectability)

↳ SEV x OCC x DET = RPN (Risk Priority Number)

↳ Recommendation - Action

↳ Assessment of Action Taken → RPN (update)

↳ → RPN still [a residual risk] / not acceptable risk → Risk / Benefit Assessment

Risk Management Plan: involves following Risk Management Activities

Activity	Description
Hazard Identification	Initial identification of hazards and hazardous situations associated with the combination product (PPS & Device)
Design Risk Assessment	Assessment of risk associated with the design of the product, e.g compatibility of parts, interfaces and overall function. Outcome are Design Requirements
Process Risk Assessment	Assessment of risks associated with the manufacturing process at respective production units
Application Risk Assessment	Assessment of risk associated with the use and misuse of the combination product (human factors). Outcome are Design Requirements
Transfer Risk Assessment	Assessment of risks associated with the transfer of the design from the development stage to the stability stage
Final Risk Management Report	Summary of RM activities during development prior to submission. An overall riskassessment of the combination product has to be performed and overall risk acceptance has to be evaluated and justified

Possible Content :

Product Description

- Intended Use / Purpose
- Application Specification (medical indication, user profile, use environment)
- Primary Operating Function (frequently used functions and functions related to safety)
- Etc.

Device Characteristics

- Implant
- Electronic Function
- Sterilization
- Etc.

Hazard Identification

Environmental and Energy Hazards

- Source of Heat / Cold
- Affected by Heat / Cold
- Source of Mechanical Force / Vibrations
- Affected by Mechanical Force / Vibrations
- Etc

Biological Hazard

- Loss of Sterility (device)
- Cross-Infection
- Toxicity
- Allergenicity
- Etc.

Hazard Identification

Use of Product and IFU

- Inadequate Instructions
- Complex or Confusing Controls
- Unclear Device Settings
- Etc.

Human Factor

- Insufficient Visibility, Audibility, Tactile Interface
- Storage / Usage outside Described Conditions
- Use of Expired Product
- Etc.

Hazard Identification

Production, Transportation, Storage

- Inadequate Assembly
- Inadequate Storage
- Inadequate Labelling
- Etc.

Disclaimer

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