



# safety Analyses: The Cinderella of Biostatistics?

**Impulse presentation**

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**MERCK**

## Scope

This session is a reflection and advertisement  
on  
the safety statistics in our day-to-day work.

# What comes into your mind if you think about Statistics in Pharma

1

Efficacy?

it's all  
about  
benefit /  
risk!

2

Safety?

# How present is Safety in our thinking?

## ICH E9 (R1)

Let's take the new ICH E9 (R1) Addendum on Estimands and Sensitivity analysis in clinical trials as an example

Is this an Efficacy or an Safety Guideline, or both?

✓ **Hits when searching for effect, efficacy, safety, and risk#**

Search results for 'treatment effect' and 'risk' in a PDF document:

- 3 \* safety/risk
- 4 \* efficacy
- 46 \* treatment effect

I must admit, my first association was efficacy, but treatment effect is both, isn't it?

By the way the first sentence reads: "To properly inform decision making by ... clear descriptions of the **benefits and risks of a treatment** (medicine) for a given medical condition should be made available"

=> **Efficacy only?**  
**What came into your mind?**

# How present is Safety in our thinking

## EMA Benefit-Risk project

### Who knows about the EMA Benefit-Risk project?



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

- Medicines
- Human regulatory
- Veterinary regulatory
- Committees
- News & events
- Partners & networks
- About us

Research projects

[Benefit-risk methodology](#)

## Benefit-risk methodology [Share](#)

The European Medicines Agency's opinions are based on balancing the desired effects or 'benefits' of a medicine against its undesired effects or 'risks'. The Agency can recommend the authorisation of a medicine whose benefits are judged to be greater than its risks. In contrast, a medicine whose risks outweigh its benefits cannot be recommended for marketing.

Weighing up the benefits and risks of a medicine is a complex process, since it involves a large amount of data. In addition, there is always some uncertainty around the actual risks of a medicine, because they can only be determined by looking at the information at a given point in time.

The project consisted of five 'work packages':

Work package	Status
1. Describing the benefit-risk assessment models already being used in the European Union's regulatory network	Completed March 2010
2. Assessing the suitability of the current tools and processes used in benefit-risk assessments	Completed August 2010
3. Field-testing the most appropriate models in five European medicine regulatory agencies	Completed June 2011
4. Refining the most suitable models for use in medicines regulation to create a new benefit-risk tool	Completed February 2012
5. Training European assessors to use the final tool	Started March 2012

## Focus we give Safety

### Example Visualisation - ASCO

- 42,500 attendees in 2019 to the Annual Meeting
- I would guess  
99.9% of all presentations display efficacy using graphics for visualisation  
&  
83.4% of all presentations display safety as tables only (and sometimes related AEs only)



## Focus we give Safety Recognition

- During a submission - who is the star
  - the efficacy stats?
  - the safety stats?
- Moving to safety statistics – how might this be perceived
  - climbing up the job ladder?
  - put on the sideline?
- Do we recognise that for safety statistics a special skill set is needed?
- When do we start to think about safety in drug development
  - when writing the ISS SAP?
  - just after first patient in, e.g. we support the risk management plan early?
- What do we do when a new safety finding is recognised
  - throw the messenger into the dungeon?
  - congratulate the messenger that we have identify the risk early?

## For reflection

- What is the value of safety analysis in your company?
- What is the value you give safety when communicating with your team?
- What is the resourcing provided on safety (stats & programming)?
- What is your view on the need of a special skill set?
- What is the complexity of safety analyses (prg & stats) compared to efficacy analyses?
- What is the data source your team is using for safety assessment?



# Discussion

**YOUR view**

1  
2  
3  
4  
5