# Analysis of CSRs already published (PhUSE review)

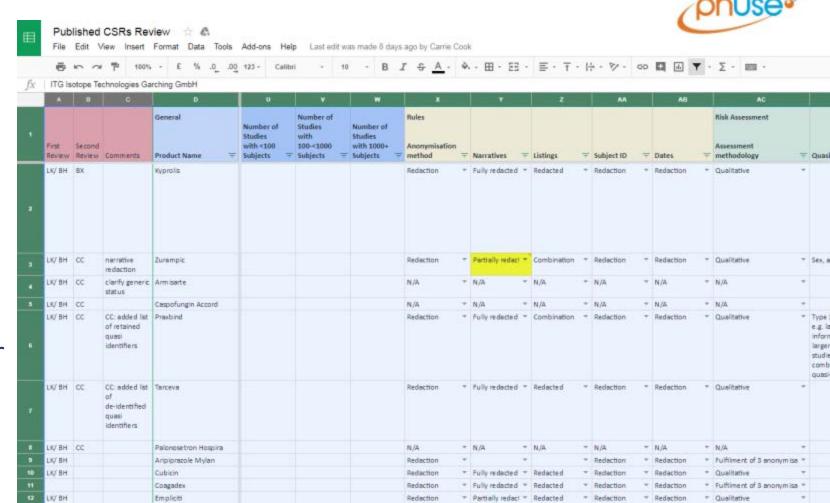
Lukasz Kniola, Biogen, UK
EMA Technical Anonymisation Group (TAG) Meeting
29-30 November 2017

## Published CSRs Review Spreadsheet

Prepared by PhUSE De-Identification Working Group

Will be publically available, searchable.

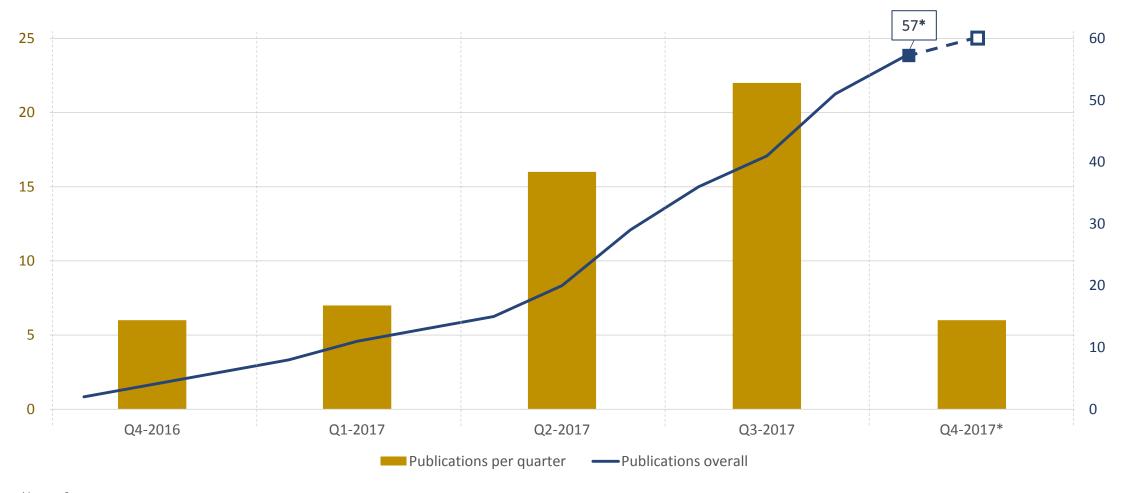
Filters to simplify searches and find similar publications



# Categories

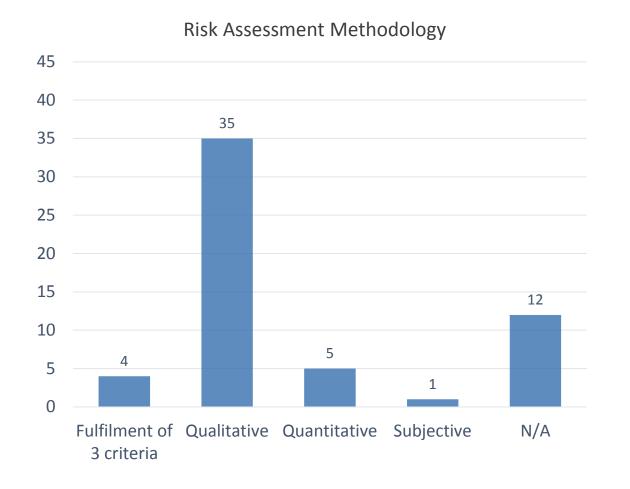
| EMA admin        | Size                                 | Rules            | Risk Assessment     | Other                                      |
|------------------|--------------------------------------|------------------|---------------------|--|
| Product Name     | Number of                            | Anonymisation    | Assessment          | Data utility considerations                |
| Active Substance | Documents                            | method           | methodology         | Special provision for                      |
| Sponsor          | Number of Studies                    |                  | `                   | sensitive information                      |
| Product Status   | Overall                              | In-text Listings | retained            | Special provision for non-                 |
| Publication Date | Number of Studies with <100 Subjects | Dubject ib       |                     | subject personal data (vendors, PIs, etc.) |
| Procedure Type   | Number of Studies                    | Dates            | Population used for | (**************************************    |
| AtcCode          | with 100-<1000                       |                  | risk calculation    |  |
| Generic          | Subjects                             |                  | Threshold used      |  |
| Biosimilar       | Number of Studies                    |                  |                     |  |
| Procedure Number | with 1000+ Subjects                  |                  |                     |  |
| etc.             |                                      |                  |                     |  |

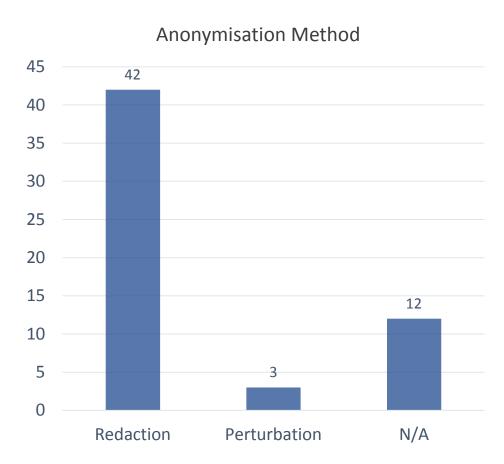
### Publications Over Time



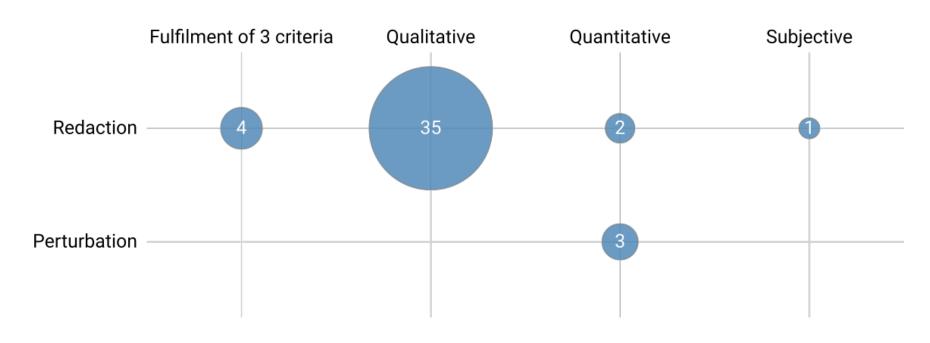
<sup>\*)</sup> As of 31-Oct-2017

## Summary of findings

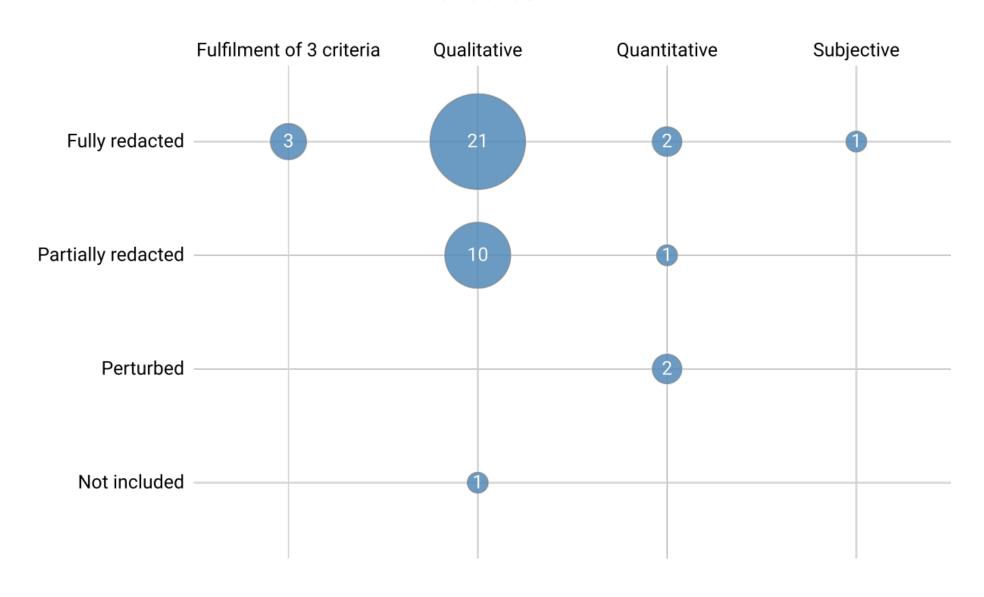




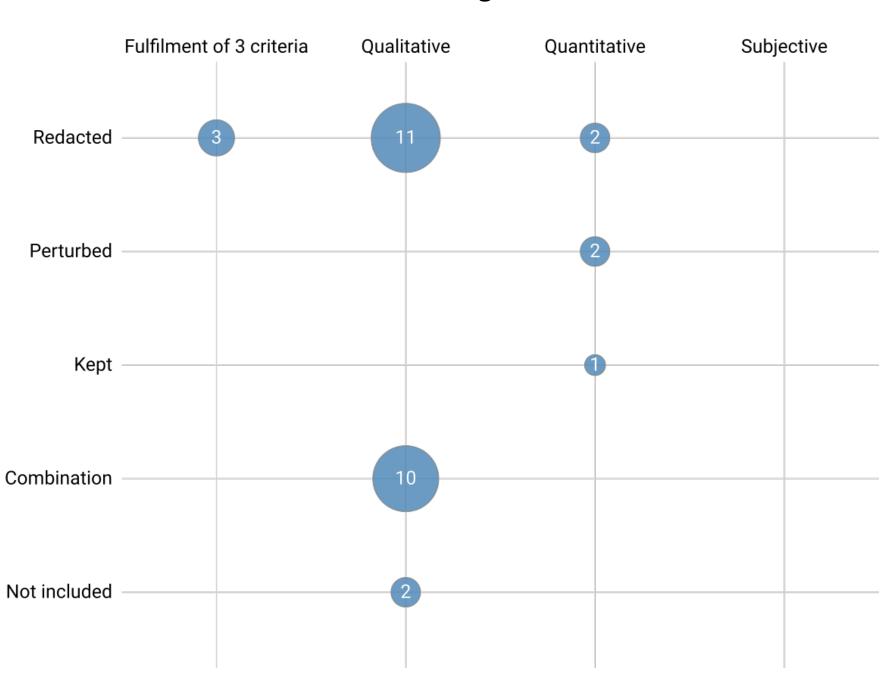
#### **Anonymisation Method**



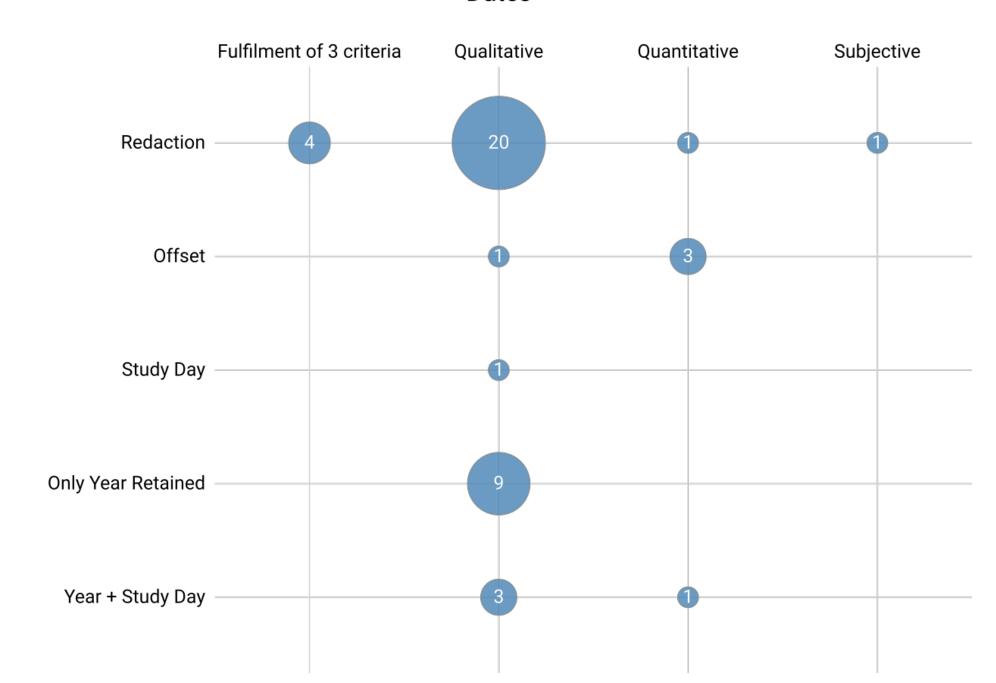
#### **Narratives**



#### **In-text Listings**



#### Dates



## Common Quasi-Identifiers

- Age, sex, race/ethnicity, country, site
- Height, weight, BMA, BSA
- Medical History
- Dates

SAEs, ConMeds, Labs

# Quantitative Approach - details

| General Product Name | Sponsor                           | Orphan | Number of<br>Studies (<100/<br>100-<1000/<br>1000+ subjects) | Rules  Anonymisation method | Narratives         | Listings  | Subject ID   | Dates               | Quasi-identifiers:<br>retained  | Quasi-identifiers: de-<br>identified   | 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Threshold used |
|----------------------|-----------------------------------|--------|--|-----------------------------|--------------------|-----------|--------------|---------------------|---------------------------------|--|---|----------------|
| Alprolix             | Swedish Orphan<br>Biovitrum AB    | Yes    | 5 (3/2/0)  | Redaction                   | Fully redacted     | Redacted  | Redaction    | Redaction           | None                            | Age, race, country,<br>height, weight, BMI,<br>SAEs, surgeries,<br>bleeding episodes     | Submission population                   | 0.09           |
| Zinbryta             | Biogen Idec Ltd                   | No     | 11 (4/6/1)   | Redaction                   | Partially redacted | Kept      | Redaction    | Year & Study<br>Day | Sex, year of dates, coded terms | Age, race, country, profession, height, weight   | Submission population                   | 0.09           |
| Afinitor             | Novartis<br>Europharm Ltd         | No     | 1 (0/1/0)  | Perturbation                | Fully redacted     | Redacted  | Perturbation | Offset              | QIs perturbed                   | Gender, age, race, site ID, date, MH, SAE  | Similar studies,<br>any sponsor         | 0.09           |
| Darzalex             | Janssen-Cilag<br>International NV | Yes    | 5 (4/1/0)  | Perturbation                | Perturbed          | Perturbed | Perturbation | Offset              | QIs perturbed                   | Gender, age, race, site ID, date, MH, SAE, height, weight, BMI, drinking, smoking habits | Similar studies,<br>any sponsor         | 0.09           |
| Imbruvica            | Janssen-Cilag<br>International NV | Yes    | 3 (0/3/0)  | Perturbation                | Perturbed          | Perturbed | Perturbation | Offset              | QIs perturbed                   | Gender, age, race, site ID, date, MH, SAE  | Similar studies,<br>any sponsor         | 0.09           |

## Data utility considerations

- Aggregate summaries and analyses have the most scientific value and were kept.
- Patient-level data redacted due to:
  - Rare disease
  - Sensitive information
  - Unique information
  - Unfamiliar process
  - Presumed very detailed knowledge by plausible adversaries

## Questions and Discussion