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European Network of Centres for  
Pharmacoepidemiology and  
Pharmacovigilance

## Checklist of Methodological Standards for ENCePP Study Protocols

As adopted by the ENCePP Steering Group on 19/03/2010

The purpose of the checklist is to improve the quality of studies by stimulating consideration of important epidemiological principles for designing a pharmacoepidemiological (PE) or pharmacovigilance (PV) study and writing a study protocol. The checklist is intended to promote quality of such studies, not their uniformity. ENCePP welcomes innovative designs and new methods of research. However, it is possible that some of the questions below do not apply to such innovations, in which case, the answer 'N/A' (Not Applicable) can be checked. **Please fill the 'Comments' field included at each section in situations where a listed question does not apply or where your answer is "No". This will help ENCePP keep the Checklist of Methodological Standards for ENCePP Study Protocols in line with the developments in science and methodology.**

The (Primary) Lead Investigator of the study for which the status of "ENCePP Study" is applied for must:

- Make the following declaration by answering "yes" or "no" to each question related to the information contained in the study protocol. If the answer is 'yes', the page(s) of the study protocol where the issue is addressed should be recorded. The space available at the end of each section should be used to provide comments, in particular to provide an explanation on why the answer 'No' or 'Not Applicable' (N/A) has been chosen.
- Provide an electronic copy of the supporting study protocol.
- Sign the checklist.
- Amend and re-submit the checklist as necessary in case of changes to the protocol.

The undersigned declares upon honour the following answers in relation to the company or organisation that he/she represents. Signature should be by the (Primary) Lead Investigator.

### Section 1: Research question

	Yes	No	N/A	Page Number(s)
1.1 Does the formulation of the research question clearly explain:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pg 4-6
1.1.1. Why the study is conducted (e.g. to answer an important public health concern, a risk identified in the risk management plan, an emerging safety issue)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
1.1.2 The objectives of the study				
1.2 Does the formulation of the research question specify:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
1.2.1 Target population (or relevant subgroup) (i.e. population or subgroup to whom the study results are intended to be generalised)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
1.2.2 Hypotheses to be tested (if appropriate, otherwise statement that there is no <i>a priori</i> hypothesis)				

	Yes	No	N/A	Page Number(s)
1.3 Are the potential implications of the study results for benefit-risk assessment of the medicine(s) or pharmaceutical policy making discussed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.

Comments:

**Section 2: Source and study populations**

	Yes	No	N/A	Page Number(s)
2.1 Is the source population described?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
2.2 Is the study population planned to be recruited defined in terms of:				
2.2.1 Age and sex	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
2.2.2 Country of origin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
2.2.3 Disease/indication	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
2.2.4 Co-morbidity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.3 Does the protocol define how the study population will be sampled from the source population ? (e.g. any inclusion/exclusion criteria or event)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9

Comments:

**Section 3: Study design**

	Yes	No	N/A	Page Number(s)
3.1 Is the choice and rationale of study design explained? (e.g. cohort, case-control, RCT, new or alternative design)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
3.2 Is the study design explained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
3.3 Does the protocol specify the primary and secondary (if applicable) endpoint(s) to be investigated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
3.4 Does the protocol specify whether a dose-dependent or duration-dependent response is measured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
3.5 Does the protocol explain the choice of the measure(s) of effect? (e.g. RR, OR, deaths per 1000 person-years, absolute risk, excess risk, incidence rate ratio, hazard ratio, number needed to harm (NNH) per year)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
3.6 Is a calculation of the sample size provided, or is statistical power calculated according to different assumptions for patient recruitment and results?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15-21

Comments:

**Section 4: Data sources**

	Yes	No	N/A	Page Number(s)
4.1 Does the protocol describe the data source(s) used in the study for the ascertainment of:				
4.1.1 Exposure (e.g. pharmacy dispensing, GP prescribing, claims data, self-report, face-to-face interview, etc)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27.
4.1.2 Endpoints (e.g. clinical records, laboratory markers or values, claims data, self report, patient interview including scales and questionnaires, vital statistics, etc)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27.
4.1.3 Covariates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9-10
4.2 Does the protocol describe the information available from the data source(s) on:				
4.2.1 Exposure (e.g. date of dispensing, drug quantity, dose, number of days of supply prescription, daily dosage, prescriber)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10-11.
4.2.2 Endpoints (e.g. date of occurrence, multiple event, severity measures related to event)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27.
4.2.3 Covariates (e.g. age, sex, clinical and drug use history, co-morbidity, co-medications, life style, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9-11
4.3 Is the coding system described for diseases, endpoints and exposure? (e.g. ICD-10, MedDRA, WHO DD ATC)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	see Study Proposal.

Comments:

**Section 5: Exposure definition and measurement**

	Yes	No	N/A	Page Number(s)
5.1 Does the protocol describe how exposure is defined and measured (e.g. operational details for defining and categorising exposure)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8-9
5.2 Does the protocol discuss the validity of exposure measurement? (e.g. precision, accuracy, prospective ascertainment, exposure information recorded before the outcome occurred, use of validation sub-study)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
5.3 Is exposure classified according to time windows (e.g. current user, former user, non-use) or biological mechanism of action?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.

Comments:

**Section 6: Endpoint definition and measurement**

	Yes	No	N/A	Page Number(s)
6.1 Is the choice of endpoint(s) under investigation explained in terms of rationale in relation to the study hypothesis(-es)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4-5

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	Yes	No	N/A	Page Number(s)
6.2 Does the protocol describe how the endpoints are defined and measured?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27
6.3 Does the protocol discuss the validity of endpoint measurement? (e.g. precision, accuracy, sensitivity, specificity, positive predictive value, prospective or retrospective ascertainment, use of validation sub-study)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12, 13.

Comments:

**Section 7: Biases and Effect modifiers**

	Yes	No	N/A	Page Number(s)
7.1 Does the protocol address: 7.1.1 Selection biases 7.1.2 Information biases 7.1.3 Immortal time bias (e.g. anticipated direction and magnitude of such biases, validation sub-study, use of validation and external data, analytical methods)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	8
7.2 Does the protocol address known effect modifiers? (e.g. collection of data on known effect modifiers, anticipated direction of effect)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.

Comments:

**Section 8: Analysis plan**

	Yes	No	N/A	Page Number(s)
8.1 Does the plan include measurement of absolute effects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
8.2 Is the choice of statistical techniques explained in the plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
8.3 Are descriptive and stratified analyses included in the plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
8.4 Does the plan explain the method for identifying: 8.4.1. Confounders 8.4.2. Effect modifiers	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	14-15.
8.5 Does the plan explain how the analysis will address: 8.5.1. Confounding 8.5.2. Effect modification	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	14-15

Comments:

**Section 9: Quality assurance, feasibility and reporting**

	Yes	No	N/A	Page Number(s)
9.1 Does the protocol provide information on the software and IT environment (incl. database maintenance and anti-fraud protection)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	} see working procedures.
9.2 Are methods of quality assurance described?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9.3 Does the protocol adequately describe and or reference quality issues related to the actual data source?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9.4 Does the protocol discuss study feasibility (e.g. sample size, anticipated exposure, duration of follow-up in a cohort study, patient recruitment)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23
9.5 Does the protocol specify timelines/milestones for 9.5.1 Monitoring the study progress and completion of the study 9.5.2 Reporting (i.e. interim reports, final study report)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	} 23.

Comments:

**Section 10: Ethical issues**

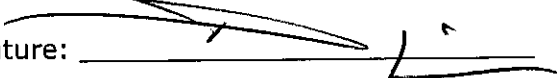
	Yes	No	N/A	Page Number(s)
10.1 Have ethics approval requirements been described?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22.
10.2 Is any outcome of an ethical review procedure been addressed and if applicable commented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22.
10.3 Have data protection requirements been described?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22.

Comments:

Name of the coordinating study entity<sup>1</sup>: BERLIN CENTRE FOR EPIDEMIOLOGY AND HEALTH RESEARCH.

Name of (primary) lead investigator<sup>2</sup>: Juergen Dinger

Date: 29/10/2010

Signature: 

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Invalidenstraße 115  
10115 Berlin

Stamp (if applicable)

<sup>1</sup> A legal person, institution or organisation which takes responsibility for the design and/or the management of a study. The (primary) lead investigator is the person authorised to represent the coordinating study entity.

<sup>2</sup> A person with the scientific background and experience required for the conduct of a particular pharmacoepidemiological or pharmacovigilance study. The lead investigator is responsible for the conduct of a study at a study site. If a study is conducted at several study sites by a team of investigators, the (primary) lead investigator is the investigator who has overall responsibility for the study across all sites.