

# 5 Years Update of the REACH Baseline Study:

## General trends and focus on impact area workers

Jan Oltmanns  
FoBiG, Freiburg, Germany  
[www.fobig.com](http://www.fobig.com)

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# The REACH Baseline Study and its 5 Years Update

- Commissioned by EUROSTAT
- Four consultants: INERIS, DHI, FoBiG, Öko-Institut
- Designed as a tool to monitor REACH
- Methodology developed in 2006/07, agreed by Steering Committee
- Risk and quality indicator system:
  - Risk Score (RS)
  - Quality Score (QS)
  - for all 4 impact areas (environment, humans via the environment, consumers and workers)
- Baseline in 2006/07 („pre-REACH“), published 2009
- Update 2011 (after first registration), published 2012



# Methodology

- Substances randomly selected (LPV, MPV, HPV) + SVHC (n=237)
- Substance identity confidential
- Generally REACH-based approach: RCR  
Risk Score (RS) = RCR x PRM (Population Risk Modifier)
- Quality assessment by Quality Scores (QS): 1-10 (tox, exp)  
 $QS_{total} = QS_{tox} \times QS_{exp}$  (1-100); low QS: high quality
- Screening procedure to detect changes – no in-depth assessment  
Risk: „nominal“ risk (includes e.g. estimates, defaults)  
Quality: refers to quality according to the methodology  
Example: DNEL workers -> high quality as opposed to “OELs”  
derived from risk phrases, but no statement on DNEL quality  
QS is no statement on dossier quality!

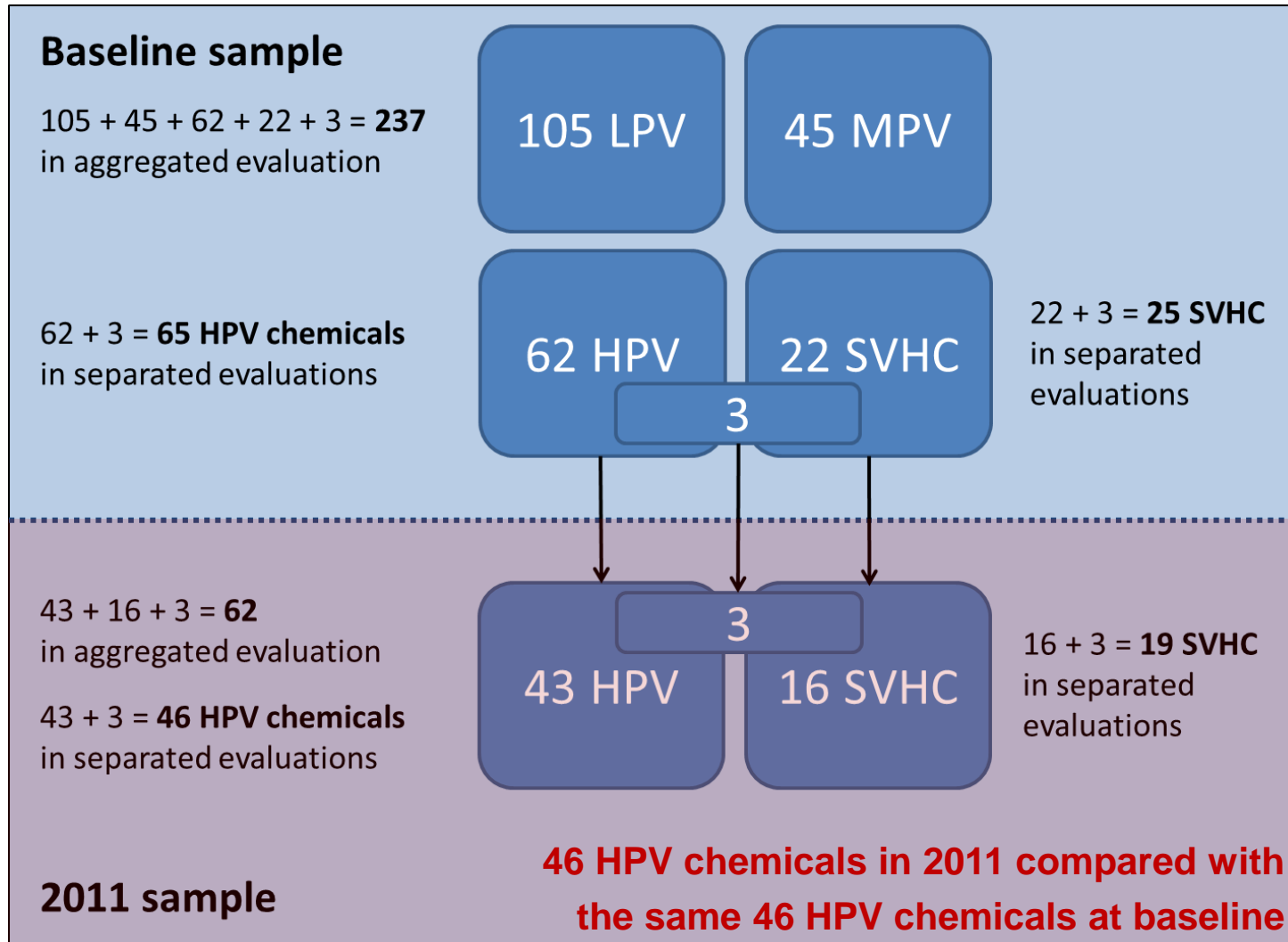
## **Key question 1: Does REACH lead to an improvement in the quality of publicly available data for the assessment of chemicals?**

1. Considerable improvement of the quality of the underlying data.
2. The quality of the data underlying the exposure estimate and the toxicity estimate improves for the majority of HPV chemicals and SVHC.
3. Due to the registration, DNELs, PNECs and more detailed information on uses and exposures become available for a large number of substances.

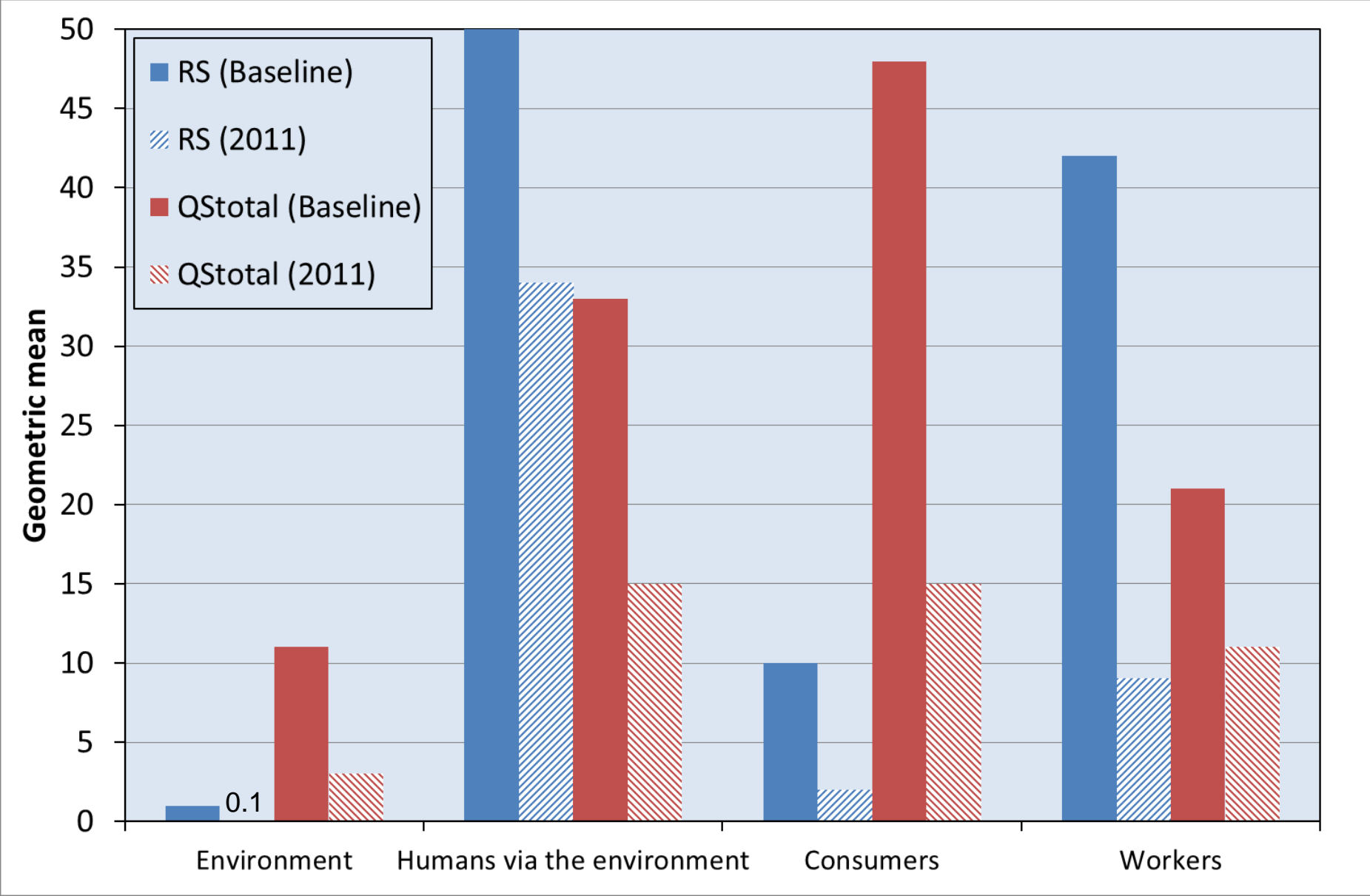
## **Key question 2: Does REACH lead to a reduction of the risks which are posed by chemicals to humans and the environment?**

1. A marked decrease has been found of the Risk Scores
2. The decline in Risk Scores is almost entirely due to decreases in RCRs
3. The analysis shows a pronounced reduction of the fraction of substances with RCRs above 1 and/or RCRs above 10 in all four impact areas.

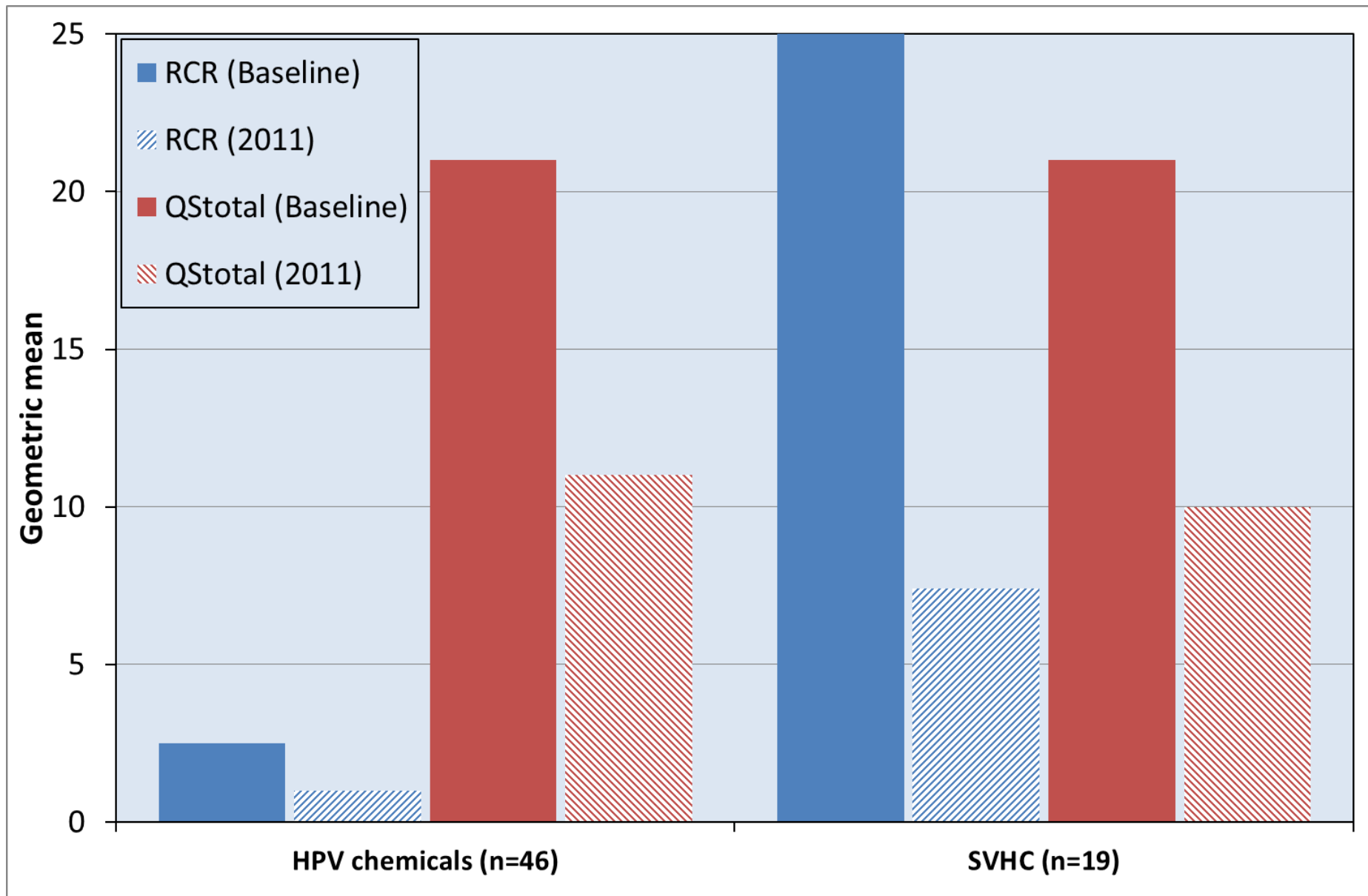
# General trends: sample comparison



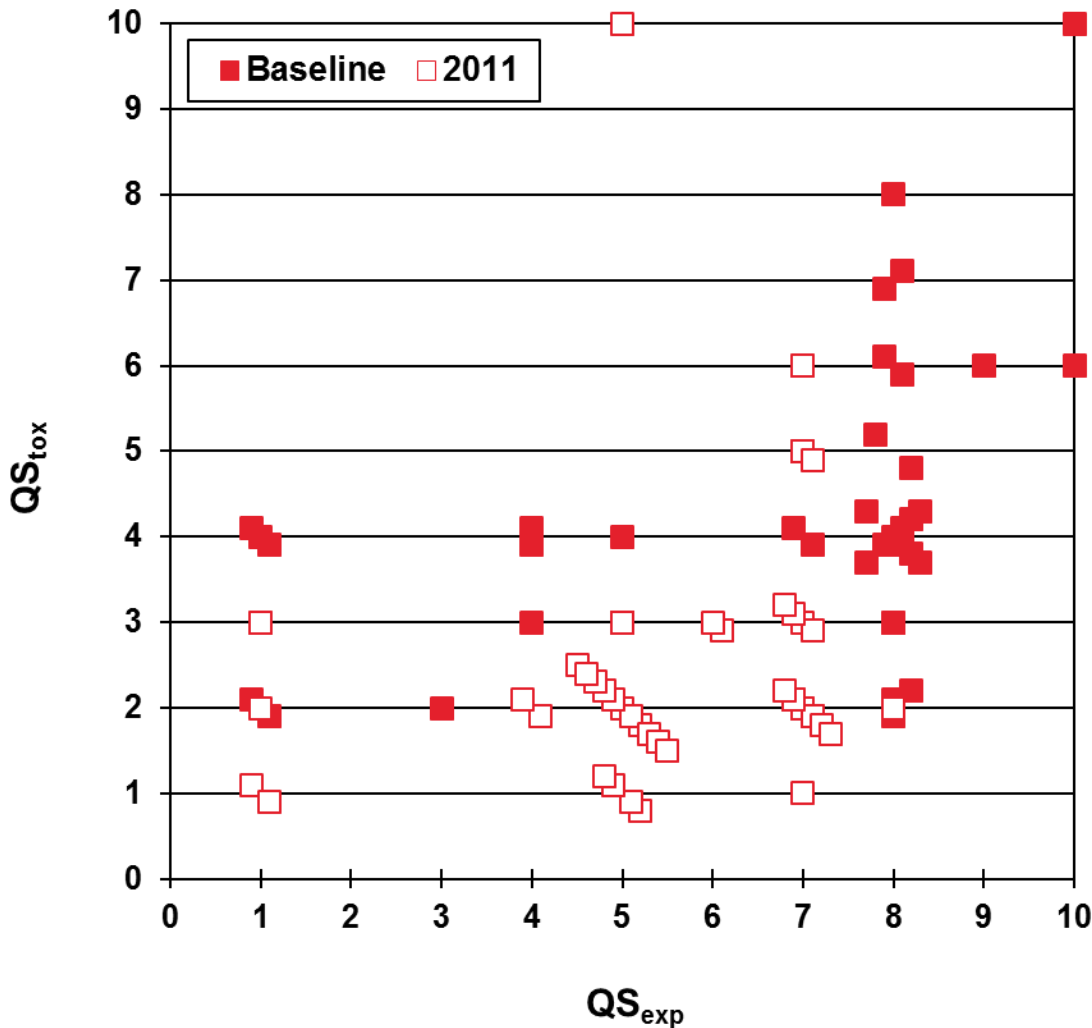
# General trend: Risk and Quality Scores (n=62)



# Impact area workers (inhalation): Overview



# Workers: Quality Scores for HPV chemicals



## Shifts caused by:

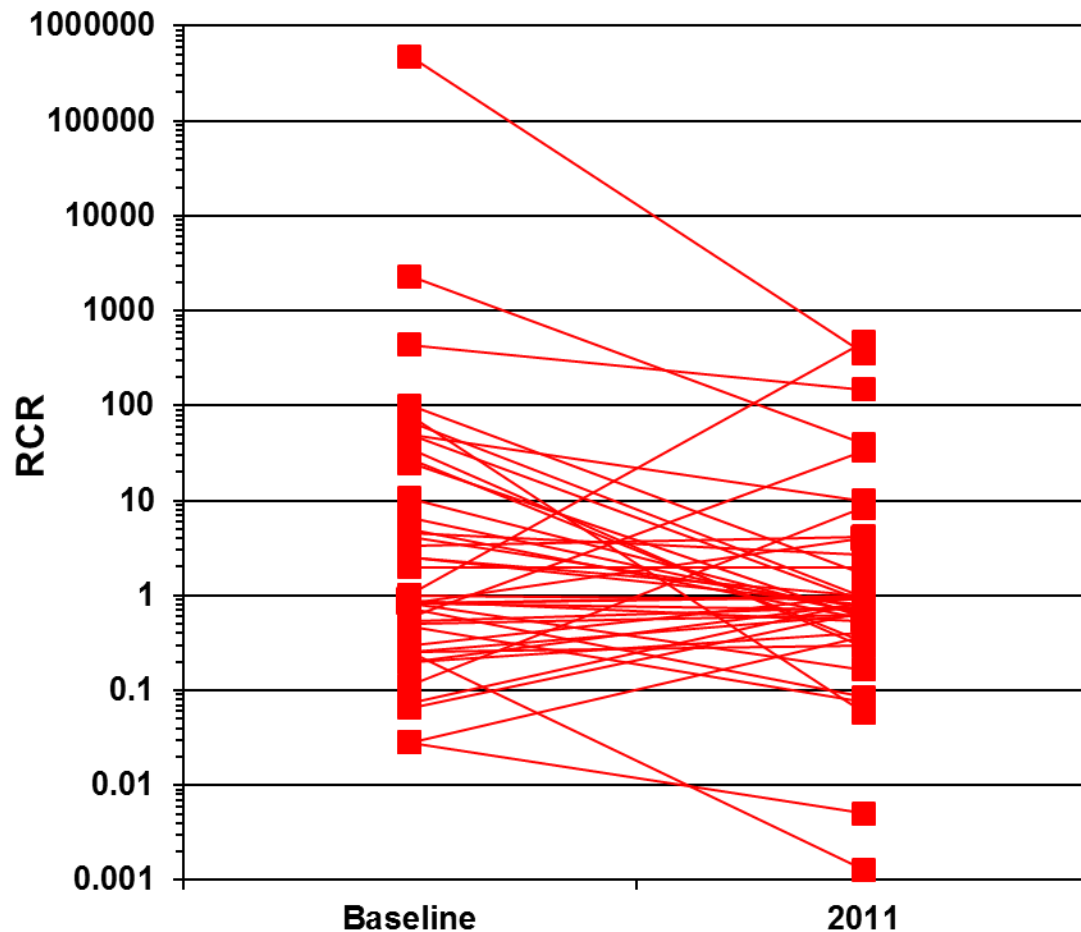
- Exposure estimates in CSRs (with OCs/RMMs)
- DNEL availability

## 2011:

**Highest quality (QS<sub>total</sub> 1) obtained for the first time**

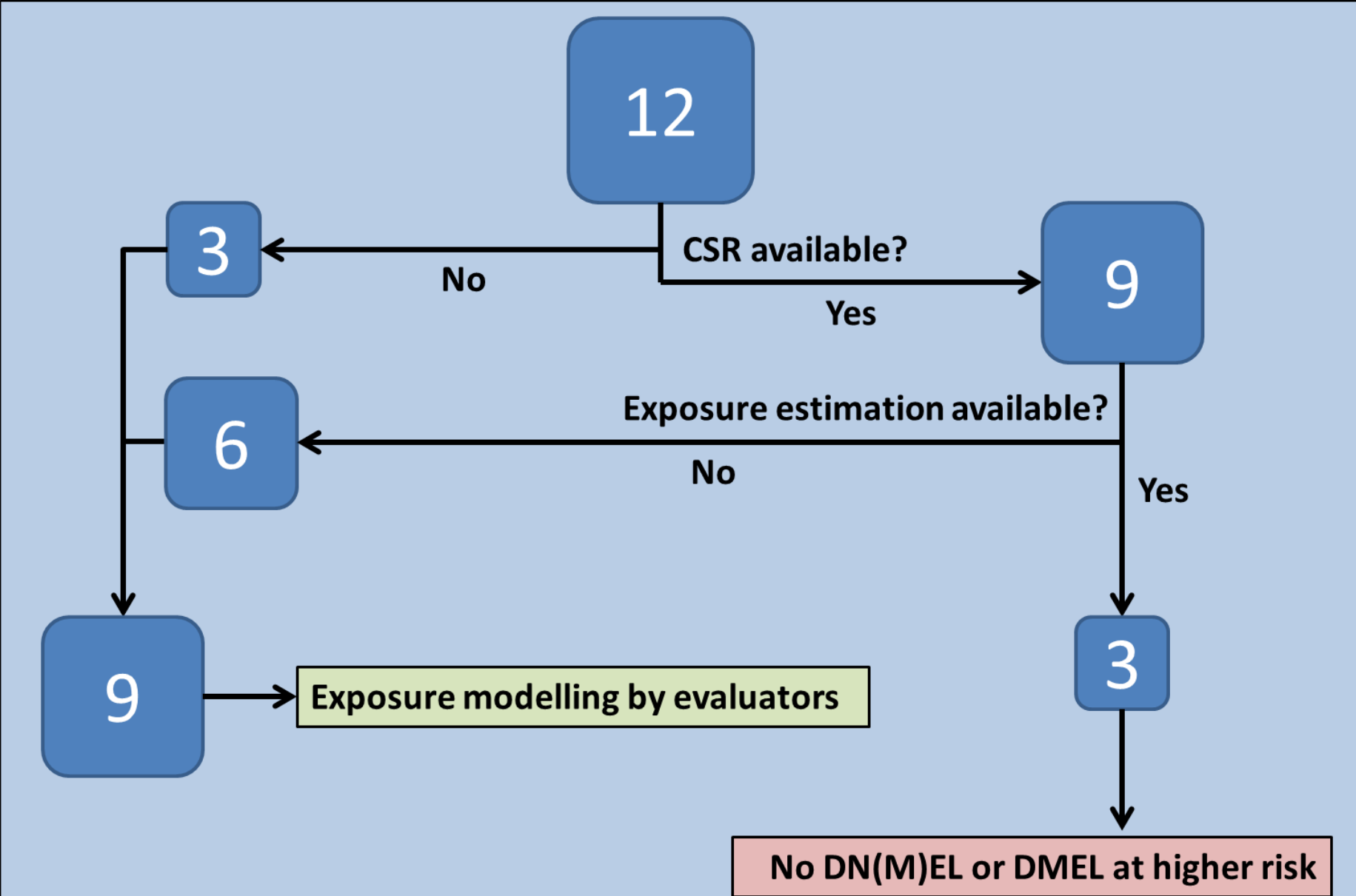


# Workers: RCR details for HPV chemicals



- „Middle 50“ narrow from 0.5-10 to 0.5-1.5
- Cluster of RCR: 0.1-1  
-> TRA exposure estimation (76% of all estimates in CSRs) and “safe use”
- 39% increase in RCRs  
-> Baseline not overconservative
- 26% of RCRs > 1 (down from 46% at baseline)

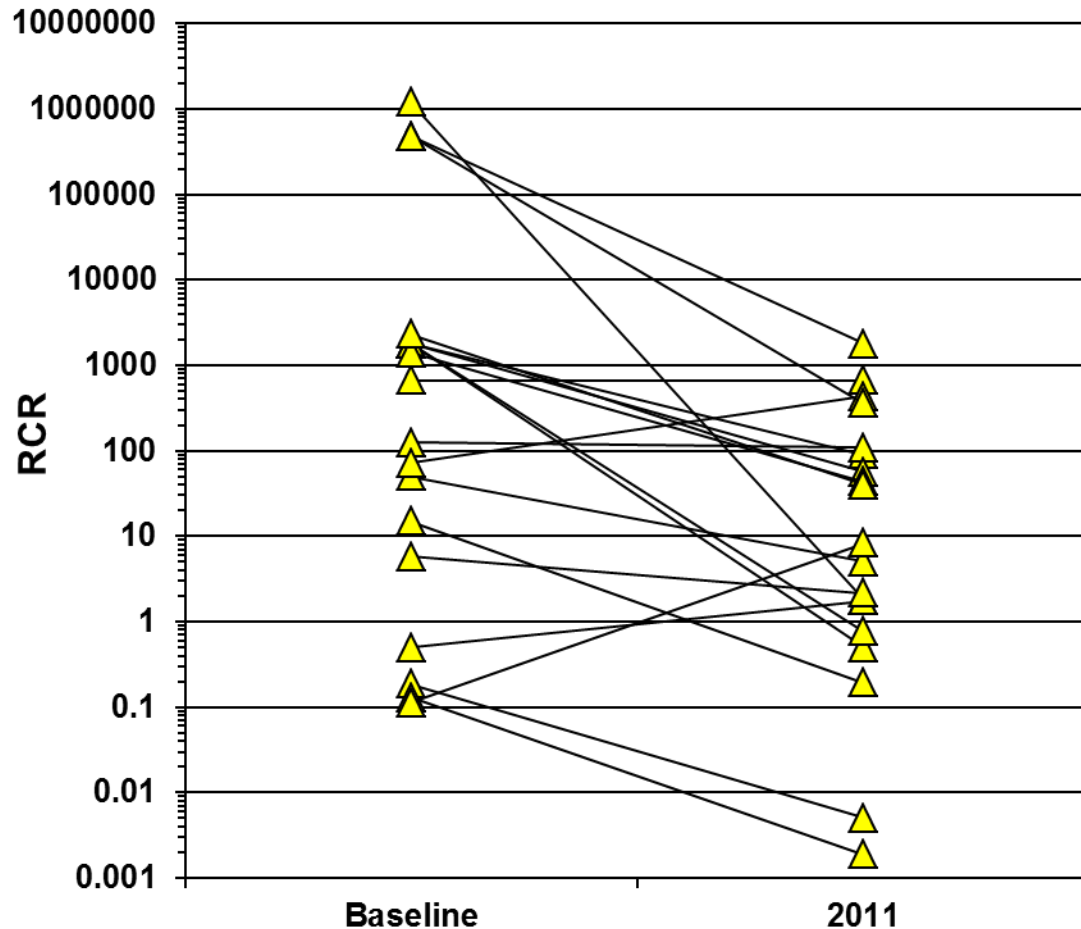
# Workers: HPV chemicals with RCR > 1



# Impact area workers: HPV summary

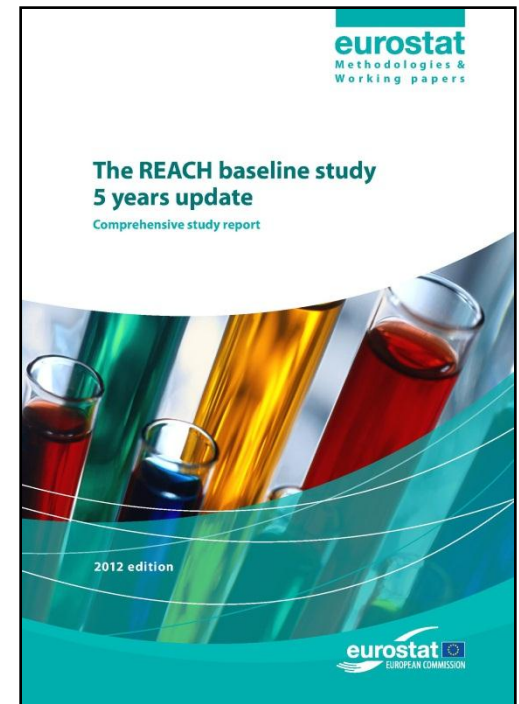
- Lower RCR and better quality
- Quality improvements largely due to
  - increased availability of DNELs
  - improved exposure estimates (OCs/RMMs in TRA modelling within CSRs)
- RCRs  $> 1$  are primarily due to
  - lacking exposure estimates
  - DMELs at higher risk
- Additional analyses of individual substances:
  - changes in RCR primarily due to changes in exposure estimates

# Workers: RCR details for SVHC (n=19)



- RCRs for 79% of SVHC decrease
- Most SVHC still with RCRs > 1
- Reduction of the fraction with RCR > 10 from 74% to 47%
- RCR > 1 due to risk level applied (5:100.000)

# Thank you for your attention!



## Publications

[http://ec.europa.eu/enterprise/sectors/chemicals/documents/reach/review2012/baseline\\_en.htm](http://ec.europa.eu/enterprise/sectors/chemicals/documents/reach/review2012/baseline_en.htm)

