Landeszentrum Gesundheit
Nordrhein-Westfalen

If your mission includes „foresight“, efficient modeling tools are needed

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Dyadic workshop: Health impact quantification for a culture of foresight?
9th European Public Health (EPH) Conference, 9-12 Nov 2016, Vienna, Austria

GESUNDHEITSCAMPUS
NORDRHEIN-WESTFALEN

North Rhine-Westphalia

- area: 34,110.40 km^2
- population: 17,638,098 (31/12/2014)
- 53 local public health authorities, administratively situated on district level (population: min. 109,009; average 337,085, max. 1 million)

Modelling purposes

Environmental health
Consumer protection → Risk assessment models

Public health → Population based models

Risk assessment models

Focus: exposure modelling

$$ADD = \frac{(C \times IR \times EF \times ED)}{(BW \times AT)}$$

ADD	average daily dose = Exposition (mg/kg-day)
C	contaminant concentration (e.g. inhaled air) (mg/kg)
IR	intake rate (e.g. kg/day)
EF	exposure frequency (e.g. 2x/week)
ED	exposure duration (months)
BW	body weight (kg)
AT	averaging time (years)

Exposure modelling

Point estimates

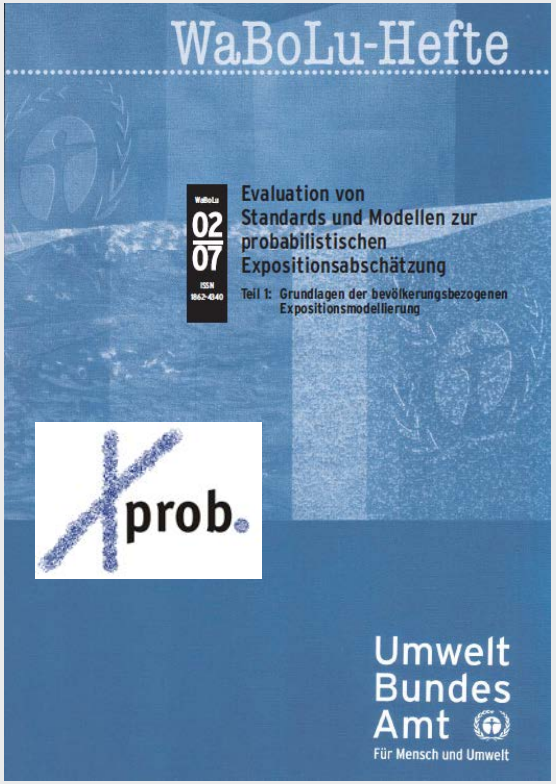
(high-end estimates
e.g., 95 percentile)

→ Probabilistic approaches

- Development of reference distributions for exposure factors (RefXP)
- Guidance on probabilistic exposure assessment

- Working group probabilistic exposure and risk assessment (AK PQRA)

www.uba.de/xprob



Population based models

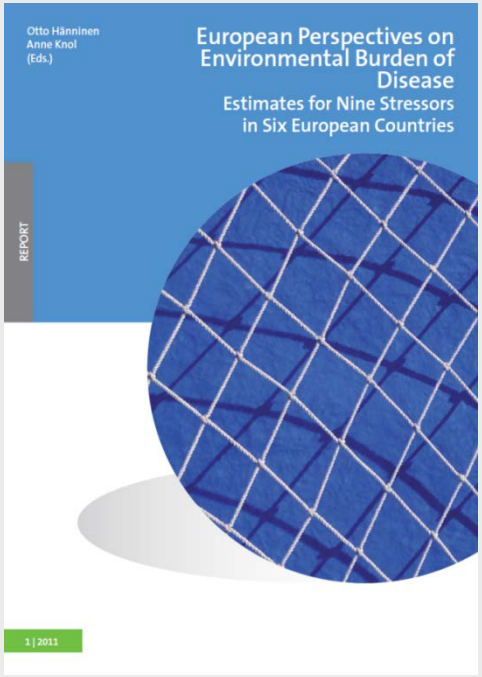
Modelling attributable cases

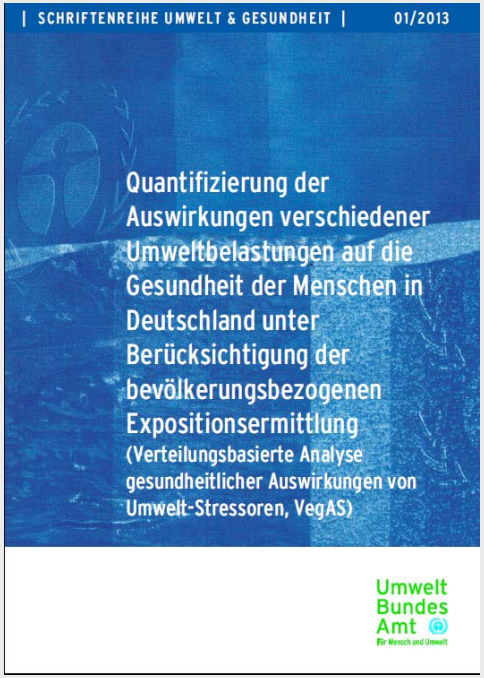
- Feasibility study of adaption of the tri-lateral project on health impacts costs of road-traffic related air pollution to NRW (2002)
- Health impacts of the European Employment Strategy (EES) (EPHIA project)
- Health impacts of road transport noise on children (ENHIS project)
- Health impacts of a NRW housing policy (RAPID project)

(Environmental) Burden of Disease approaches

- Forecast of disease burden in the Ruhr Area
- PM 10
- Second hand smoke / ETS
- Traffic noise

Burden of Disease approaches





Workshops with and survey amongst model developers and model users

Scientific Expert Workshop.
Quantifying the health impacts of policies – Principles, methods, and models.
Düsseldorf, Germany, 16 - 17 March 2010.
LIGA.Fokus 11

Update 5 April 2011: Pre-conference Workshop 1.3

"Health Impact quantification"

PART 2. HEALTH IMPACT QUANTIFICATION: STATUS AND PERSPECTIVES (14:00-18:00)

CHAIRS Johan Mackenbach, Rainer Fehr, Fintan Hurley

JECH Online First, published on July 7, 2012 as 10.1136/jech-2011-200835

Commentary

Quantitative health impact assessment: taking stock and moving forward

Rainer Fehr,[1] Fintan Hurley,[2] Odile Cecile Mekel,[1] Johan P Mackenbach[3]

qualitative analysis, the benefits of quantification in this effect analysis are several. Health impact quantification allows a much more specific description of health effects than would a qualitative analysis only. Quantitative effect estimates are also likely to carry more weight in policy discussions, particularly when the non-health benefits of the proposed policies are also presented in quantitative (eg, economic) terms.

On the other hand, one should also be

http://dx.doi.org/10.1136/jech-2011-200835

Its purpose is to inform public debate

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Health impact assessment – A survey on quantifying tools

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ABSTRACT

Integrating human health into prospective impact assessments is known to be challenging. This is true for both approaches: dedicated health impact assessments (HIA) as well as inclusion of health into more general impact assess... focuse... among... made... groups... wide r... years,... emerg... of ineq... building joint strategies of further tool development, improving the visibility of quantitative tools and methods, and engaging continuously with actual and potential users.

http://dx.doi.org/10.1016/j.eiar.2016.01.001

DYNAMO-HIA

Software developed within the framework of an EC-funded research project (www.dynamo-hia.eu)

Explore use for NRW

- BMI
- Physical activity

Workshop with developers and users

Conclusions

- Quantitative modelling useful
- Invest time and ressources
- Multiple models / tools available: potential users still not aware of them
- Need for simple and more complex models, depending on the question
- Comparative work could help
- Translation of (policy) question into models is challenging
- Still areas in public health which are hard to model (lack of data etc.)
- Reach and uptake of modelling results for decision making still underdeveloped

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