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## Methods of Health Impact Assessment (HIA)

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*Diagrams from external sources: eliminated*

# Overview:

- 1. Research questions**
- 2. Results**
- 3. Conclusions**
- 4. Workshop preview**

*[3 diagrams eliminated]*

Barnes 2000

Franssen, Lebret,  
Staatsen 1999

Breeze & Kemm 2000

# 1. Research questions

## **Research questions of Policy HIA project**

- What methodology currently being used in HIA?
  - Critical evaluation of methodology
  - Establishing preferred options
- 

## **Key components of HIA methodology**

- Systems view
- Prediction of impacts
- Determination of significance

## 2.1 Systems view

### Systems relevant to HIA

- (Multi-faceted) policies, plan, programs, projects
- (Determinants of) health determinants
- Human health: physico-psycho-social, incl. organ systems etc.

### Methods to deal with systems complexity in HIA

- (Informal) *systems analysis*: identification of system components, and their mutual relations
- *Decomposition*: breaking the issues down, e.g. into smaller “themes”, specific exposure pathways, selected health outcomes

## 2.1 Systems view, ctd.

Decomposition  
example: pathways from transport policy to health outcomes

*Diagram eliminated*

(Joffe & Mindell  
2002)

## 2.1 Systems view, ctd.

### Systems view and knowledge base

| Data type                                                                                                                      | Source                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>•Raw data</li><li>•Information</li><li>•Knowledge</li><li>•Wisdom</li><li>•...</li></ul> | <p>Print: published / grey literature, incl. reviews</p> <p>Electronic: databases, information systems, W3</p> <p>Brain: community, experts, stakeholders</p> |

### Typical HIA approach:

*Combining various data types from variety of sources*

## 2.2 Prediction of impacts

|                                   |                               |
|-----------------------------------|-------------------------------|
| Policy alternatives               | To be identified & understood |
| -> Changes in health determinants | To be predicted               |
| -> Changes in health status       | To be predicted               |

### Generic methods of HI prediction

- Expert, stakeholder & community *opinion-taking* incl. interest group sessions, key informant interviews ...
- Formal *modeling*; for selected topics: exposure estimation and *risk assessment*

## 2.2 Prediction of impacts, ctd.

### Documentation of results

Example: *Mapping diagram*, representing the relationship between program themes and health determinants

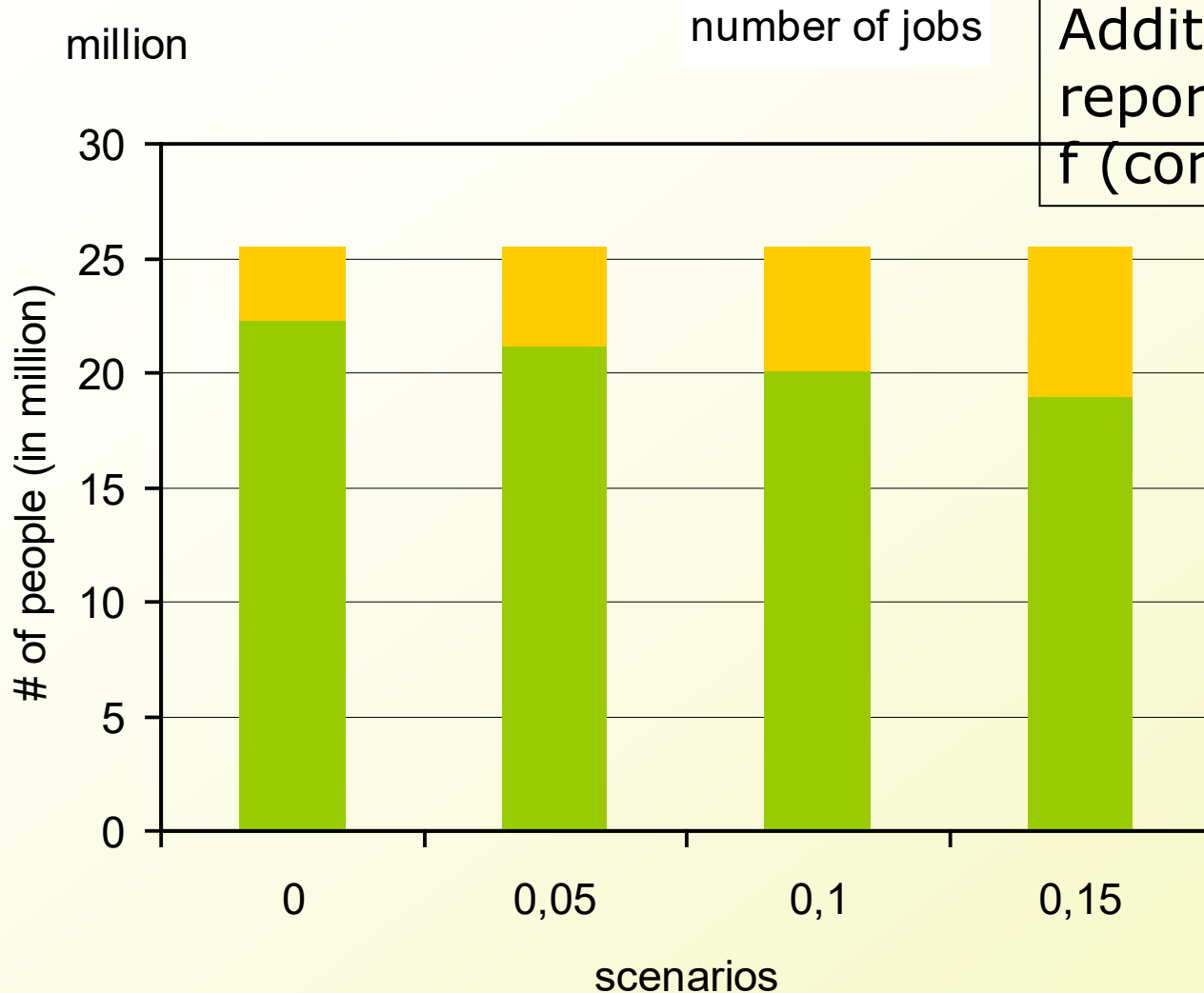
*Diagram eliminated*

(Breeze & Kemm 2000)

## 2.2 Prediction of impacts, ctd.

### Modeling example:

Additional # persons reporting poor health =  $f$  (contract shift)



### Scenarios:

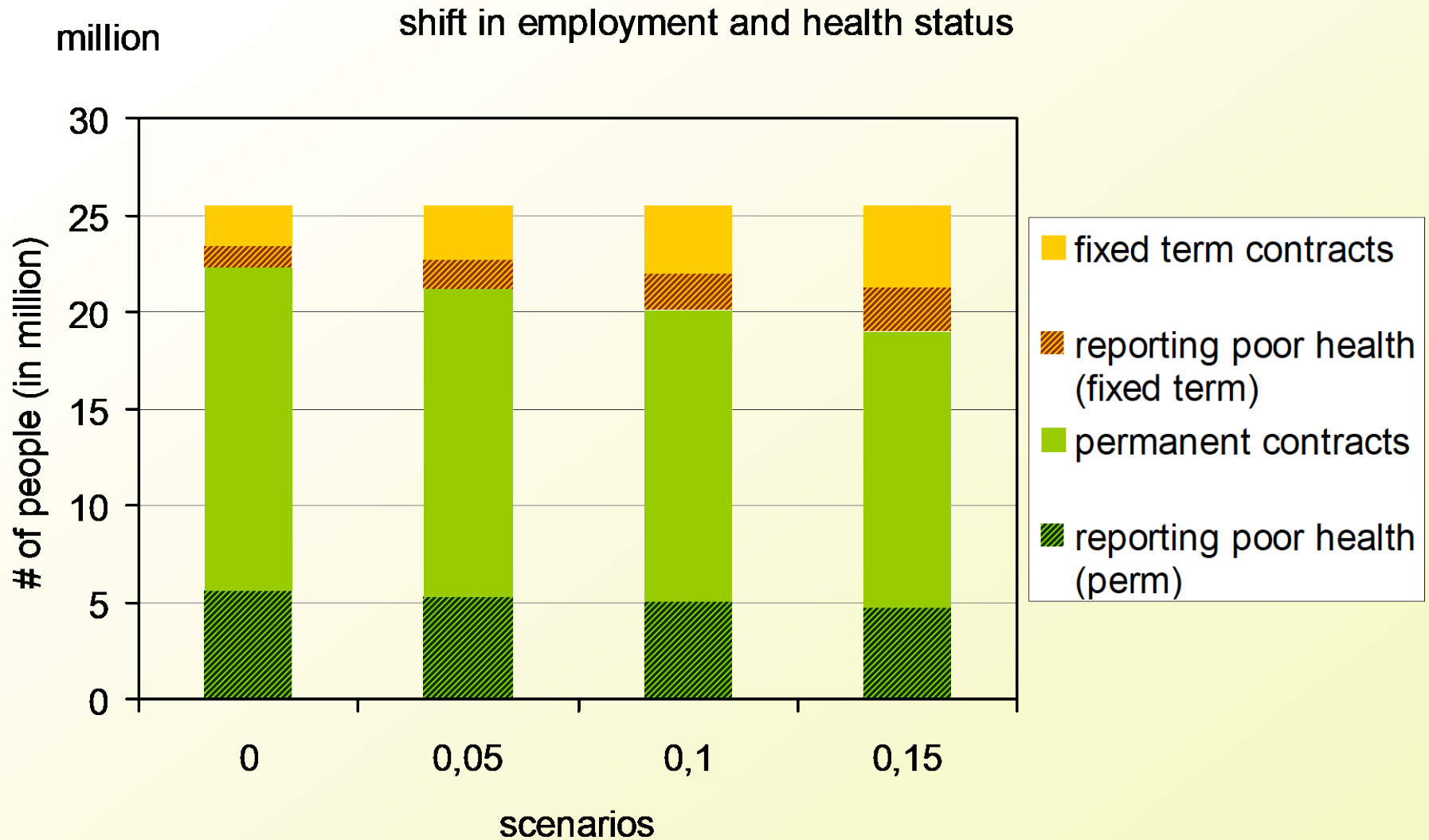
Baseline

5% shift

10% shift

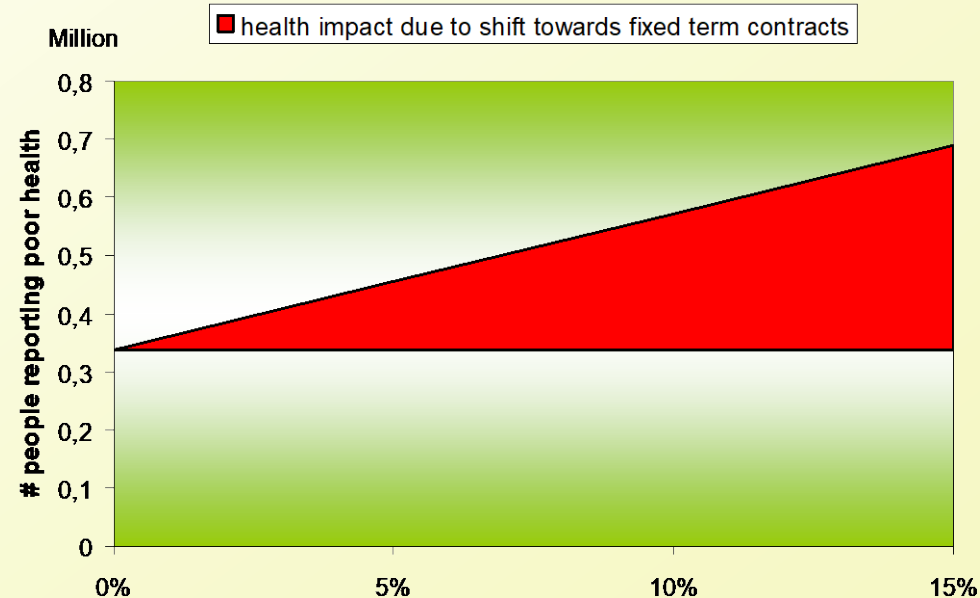
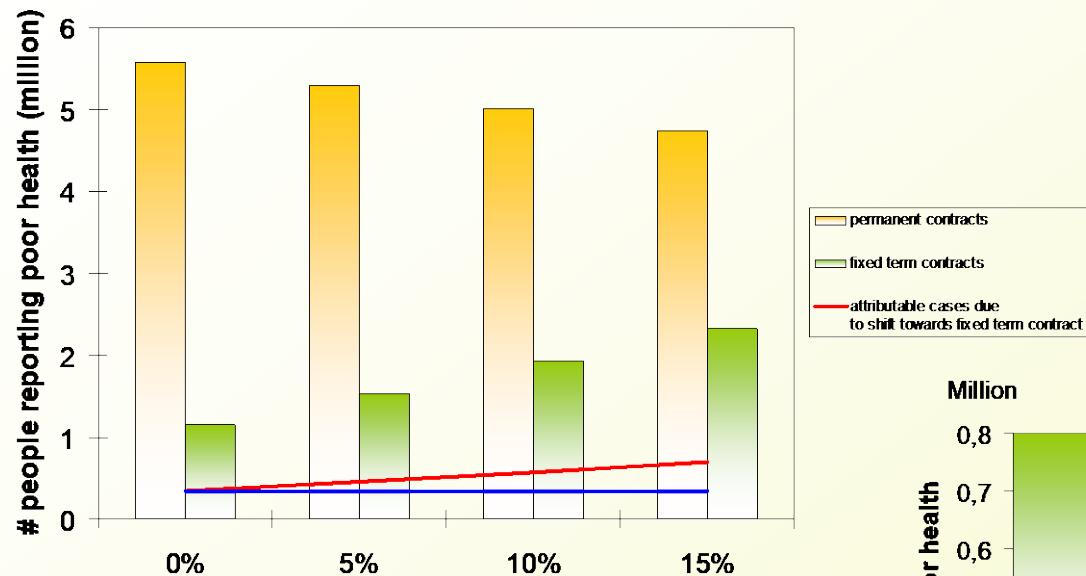
15% shift

## 2.2 Prediction of impacts, ctd.



## 2.2 Prediction of impacts, ctd.

shift in employment and health status



Next level of sophistication: Consideration of *variation* and *uncertainty* via stochastic modeling

## 2.3 Determination of significance

### Methods

Expert, stakeholder, and community judgement by *opinion-taking* incl.:

- binary decisions ("acceptable / unacceptable")
- rating (using scales), ranking

Application of explicit *standards*, incl.:

- limit values (e.g. concerning environmental media)
- formalized acceptability criteria, e.g., "< 1 additional case per year in 1,000,000 persons exposed"

# 3. Conclusions

Moderate standardization of methodology: seems both desirable and feasible

Emerging elements of "good practice" guidelines:

- „systems“ view -> *decomposition*
- „knowledge base“ -> *best evidence*
- “prediction” -> *method mix*, consideration of both *variation* and *uncertainty*
- “determination of significance” -> *method mix*

# Summary

| <b>Problems, questions</b>          | <b>Approaches</b>             | <b>Methods</b>                            |
|-------------------------------------|-------------------------------|-------------------------------------------|
| Complexity                          | Systems view                  | Decomposition, simplification             |
|                                     | Prudent use of knowledge base | Combination of print / electronic / brain |
| What is going to happen under PPPP? | Impact prediction             | Modeling & opinion-taking                 |
| What does that mean for health?     | Determination of significance | Standards & judgement                     |

## 4. Workshop preview

The presentation identifies the following key problems and questions: complexity, impact prediction, determination of significance.

1. Are there additional problems and questions of similar universal relevance to HIA?
2. Are the chosen methods adequate?
3. What are the "*pros*" and "*cons*" of the methods available?