Erasmus MC
Universitair Medisch Centrum Rotterdam

Routine data in skin cancer epidemiology

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Department of Dermatology,

Erasmus MC Cancer Institute

No conflict of interest

Structure

- Definition
- My story using routine databases in practice
- Highlights and challenges
- My tips for anyone considering this type of research

Routine data

- Data obtained from routine data-collection systems
- Not specifically collected for your research question

Databases

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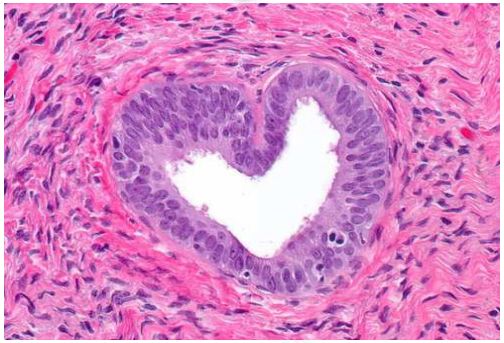
PHARMO
Institute for Drug Outcomes Research



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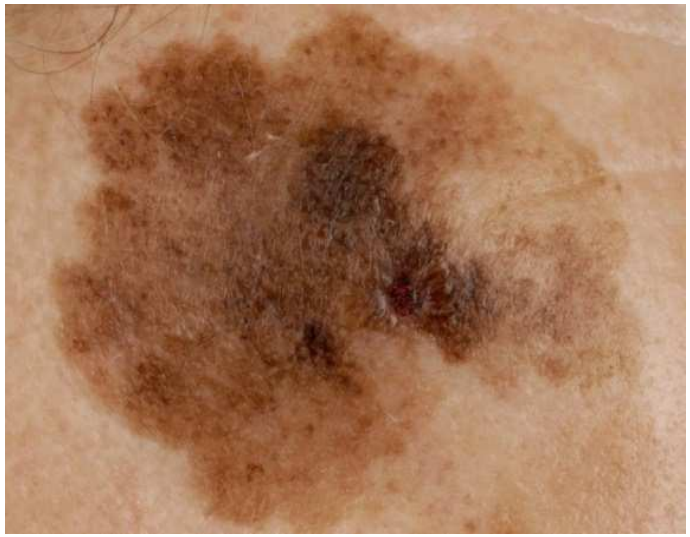
Diagnostic process of AK patients in primary care

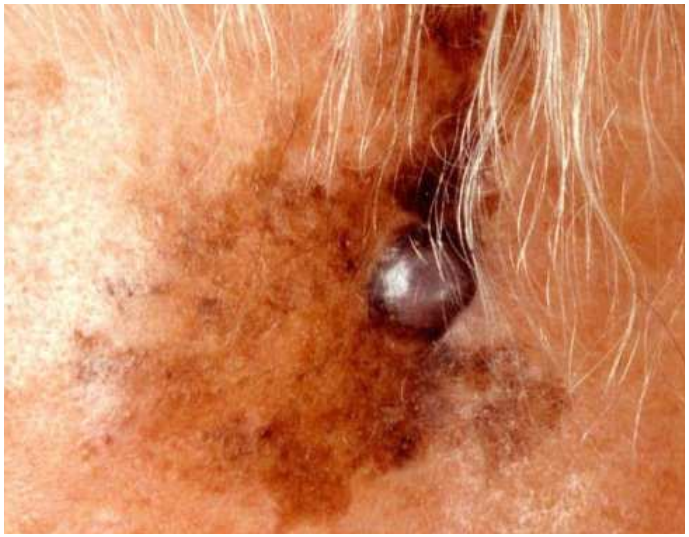
Limitations of GP database

- GP diagnosis only (no gold standard)
- No information on how certain the GP considers the diagnosis (differential diagnosis)
- No data on what is not recorded/missed

Lentigo Maligna (LM)



Lentigo Maligna Melanoma (LMM)



Incidence rates?

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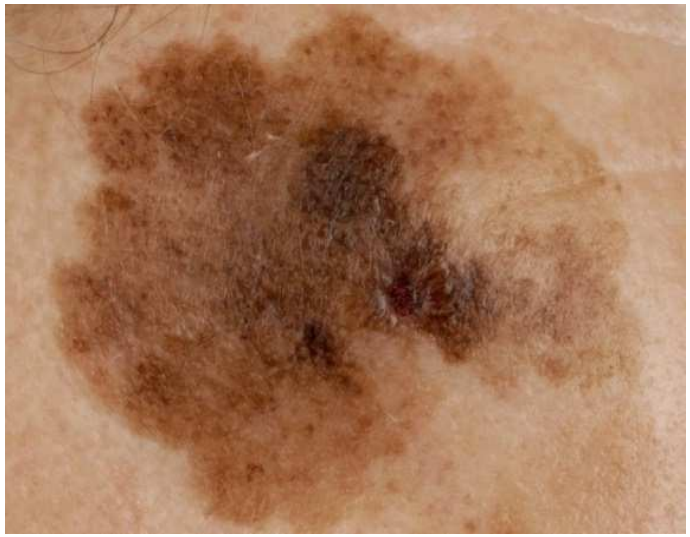
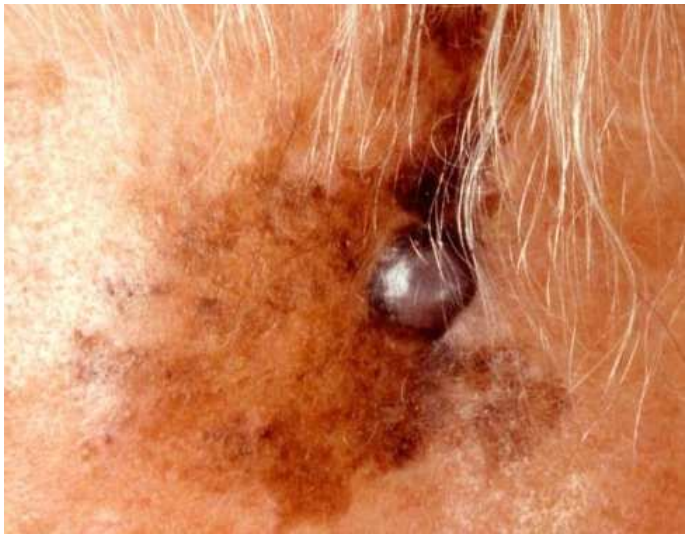
Lentigo Maligna (LM)



→

?

Lentigo Maligna Melanoma (LMM)



Risk of Progression

British Journal of Dermatology (1987) **116,** 303–310.

The risk of progression of lentigo maligna to lentigo maligna melanoma

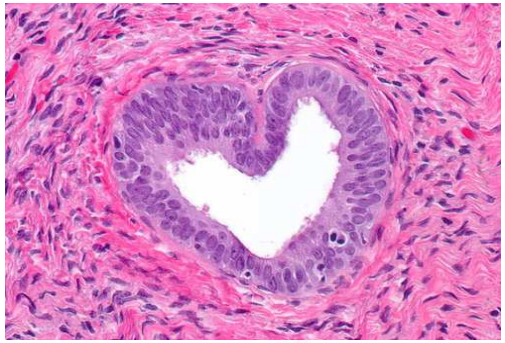
M.A.WEINSTOCK AND A.J.SOBER

Department of Dermatology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, U.S.A.

Accepted for publication 16 September 1986

Lifetime risk < 5%

Databases



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Methods

Netherlands Cancer Registry

Primary LM and LMM

- 1989 – 2013

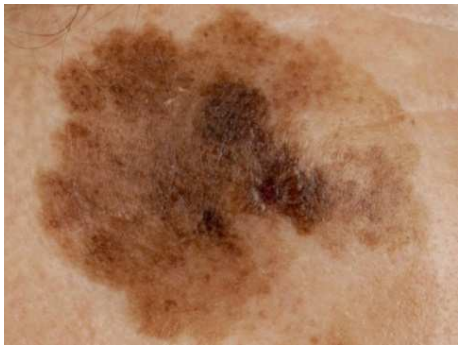
Incidence rates per 100.000 person years

- Age-standardized

Incidence trends over time

- Joinpoint regression analyses

Results - LM and LMM incidence between 1989 and 2013 in the Netherlands

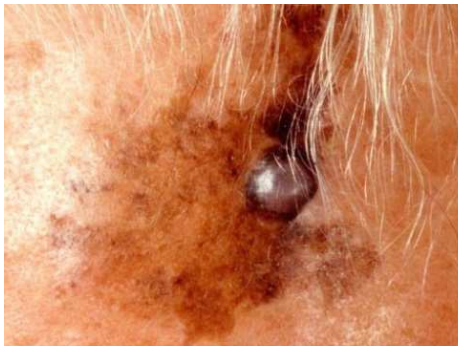


N = 10,545

58% ♀

Median age: 70 years

Head and neck region: 74%



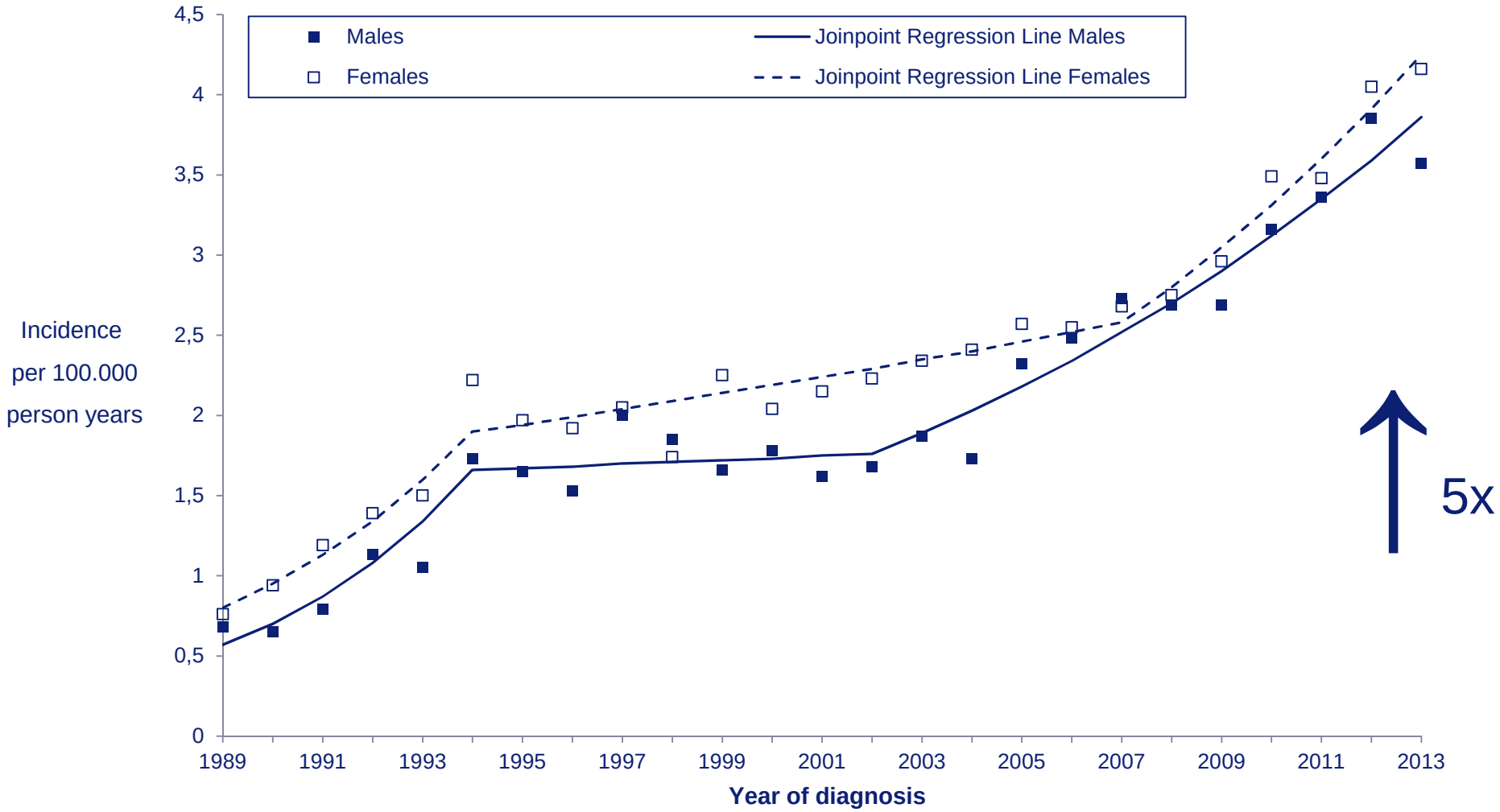
N = 2,898

57% ♀

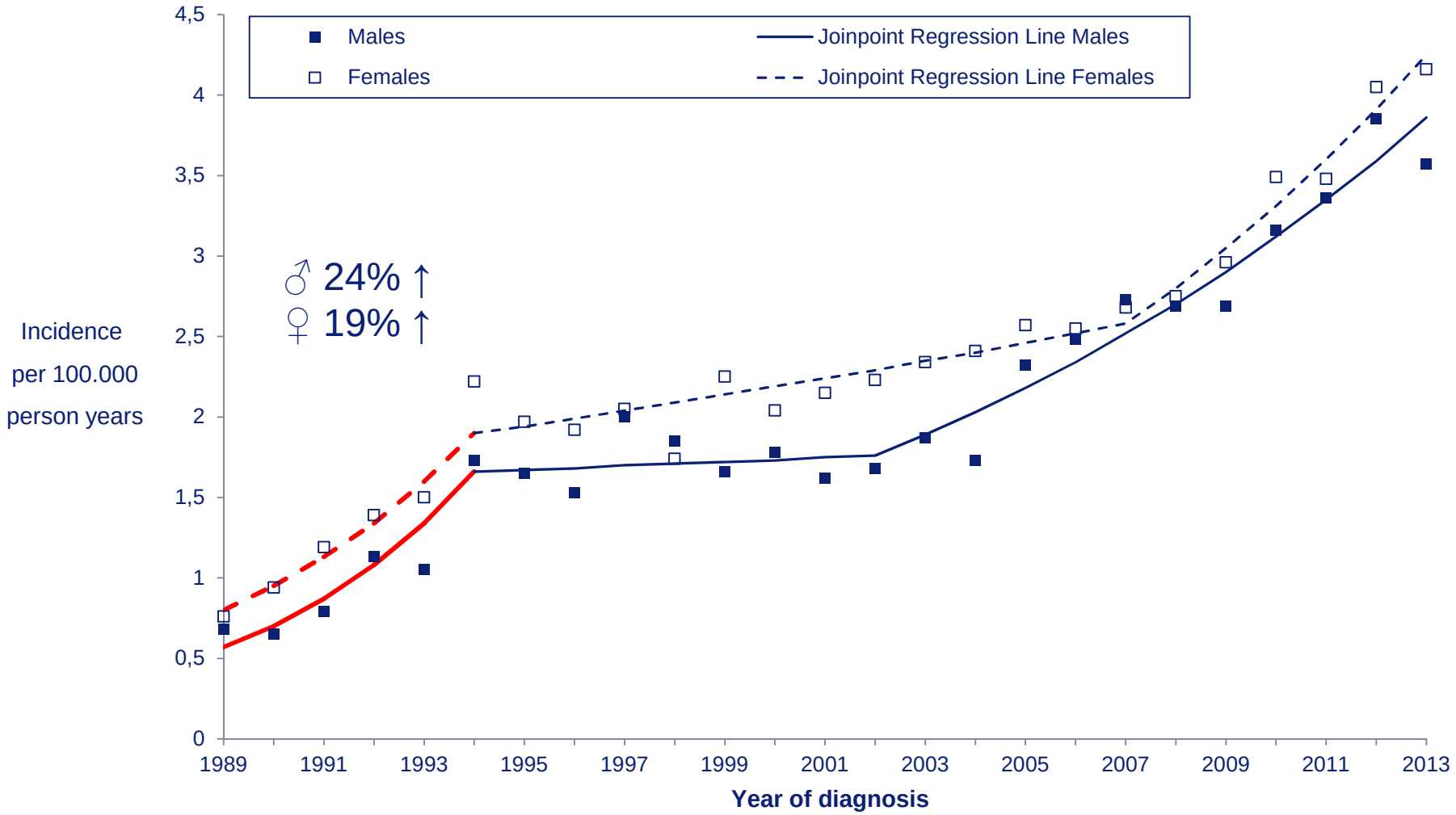
Median age: 72 years

Head and neck region: 69%

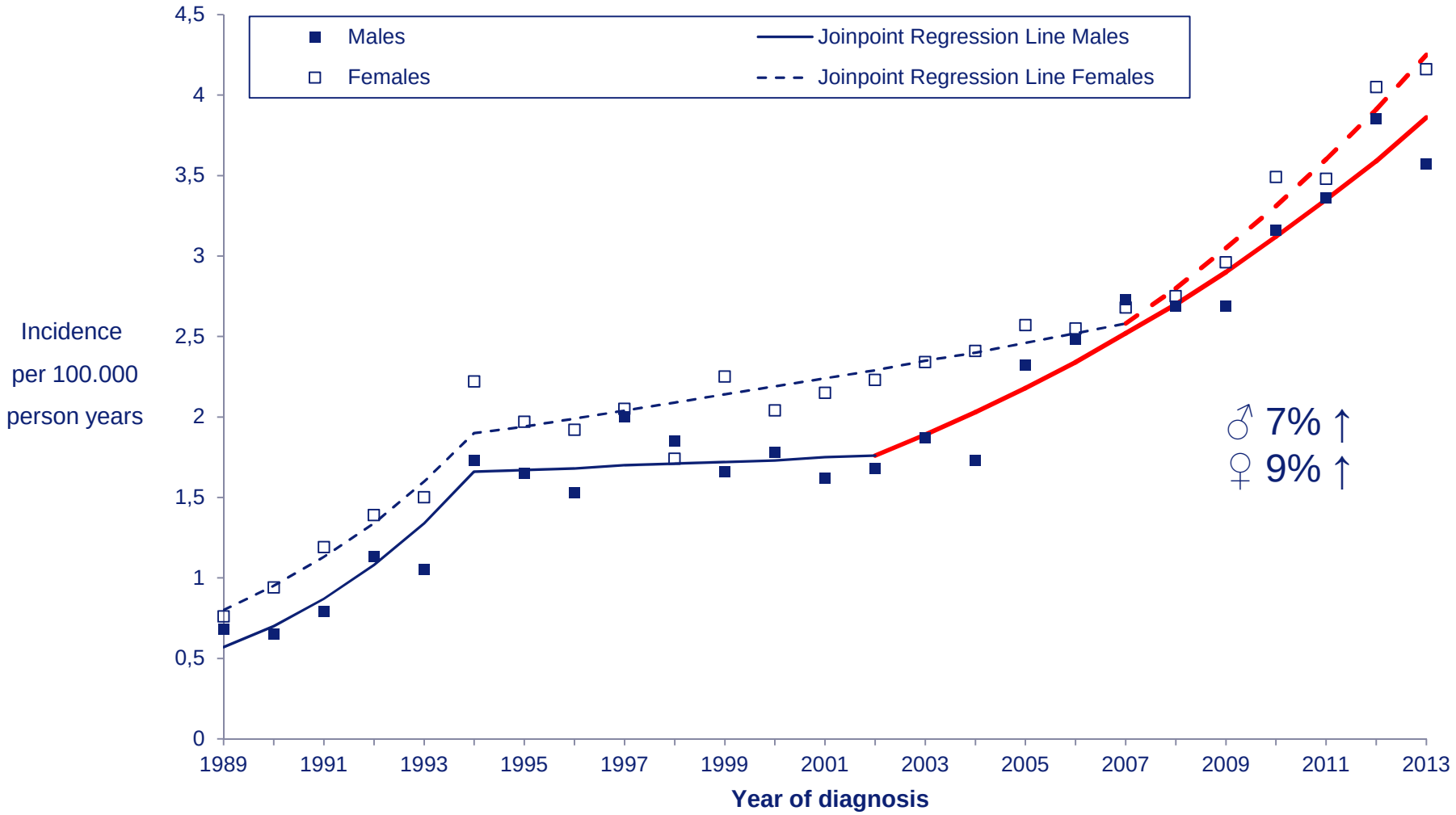
Lentigo Maligna - Incidence Rates



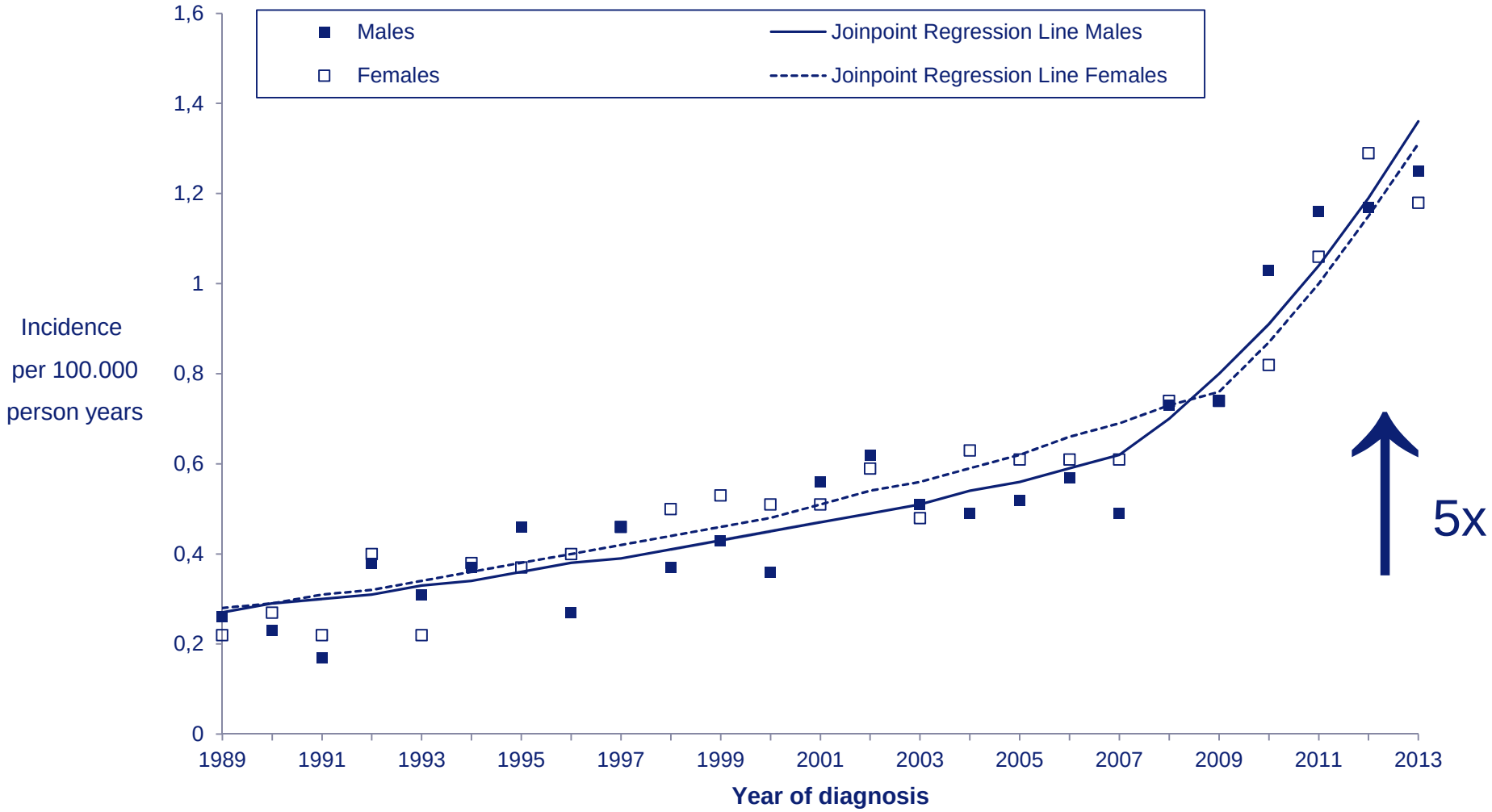
Lentigo Maligna - Incidence Rates



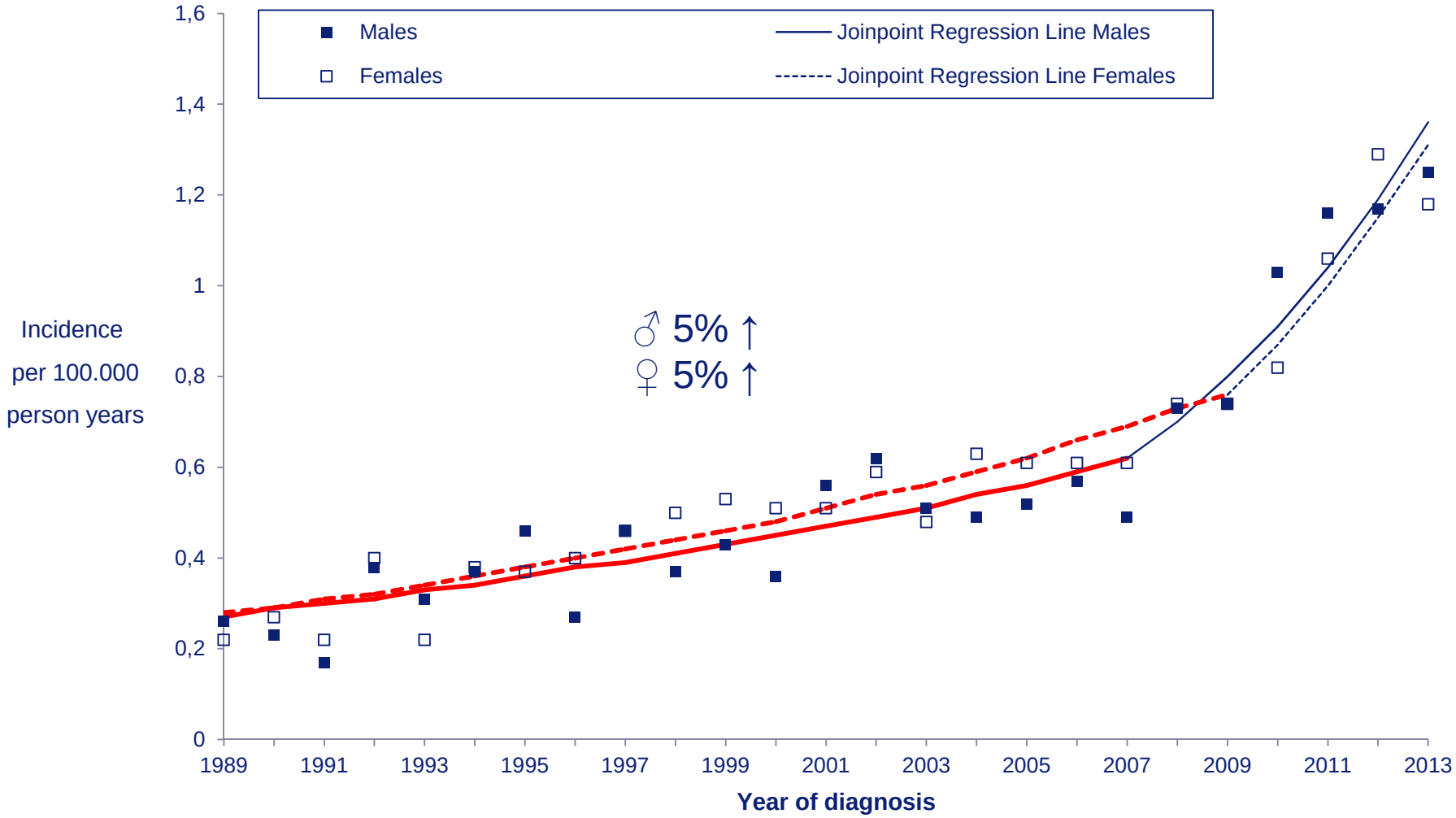
Lentigo Maligna - Incidence Rates



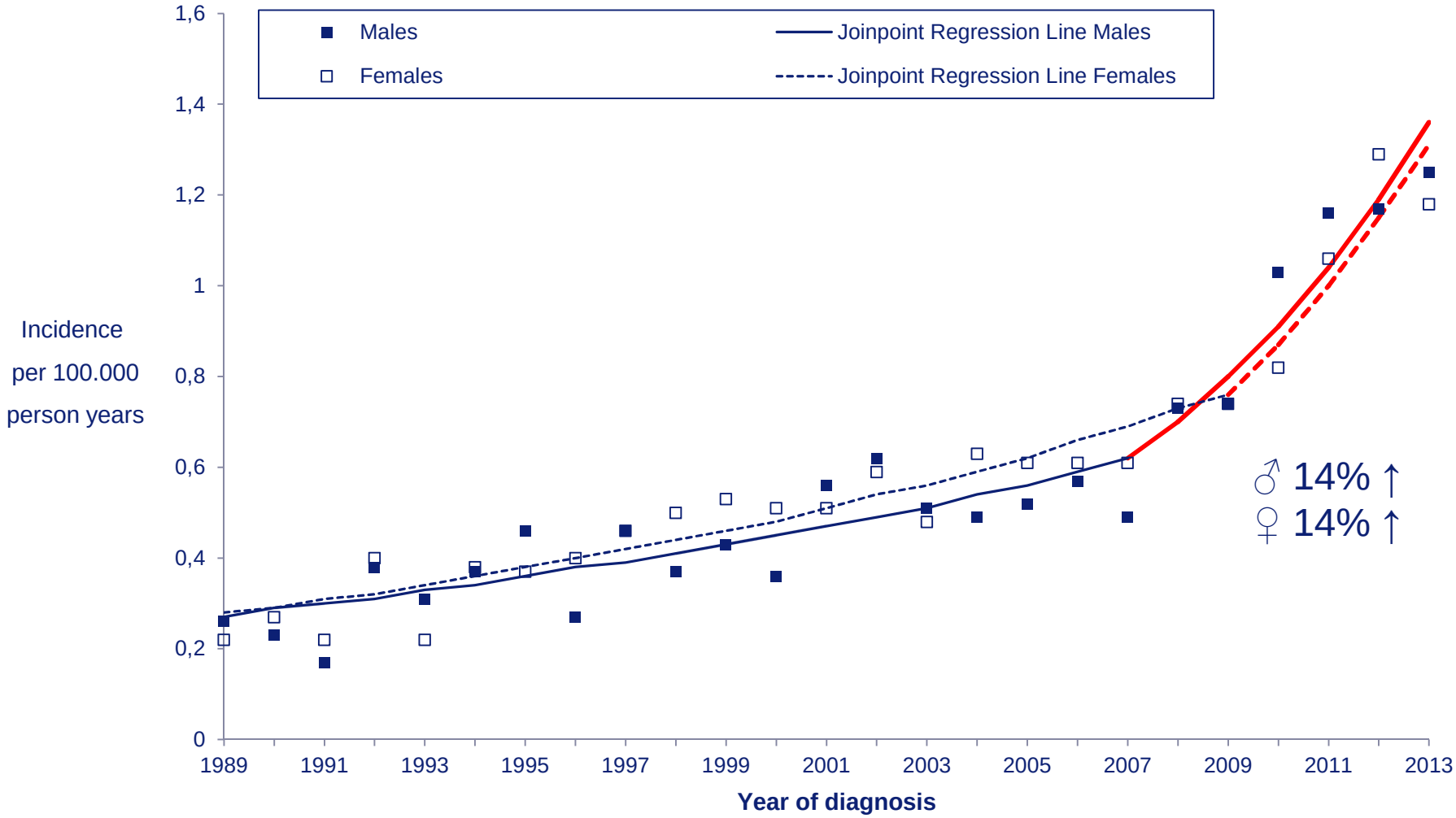
Lentigo Maligna Melanoma - Incidence Rates



Lentigo Maligna Melanoma - Incidence Rates



Lentigo Maligna Melanoma - Incidence Rates

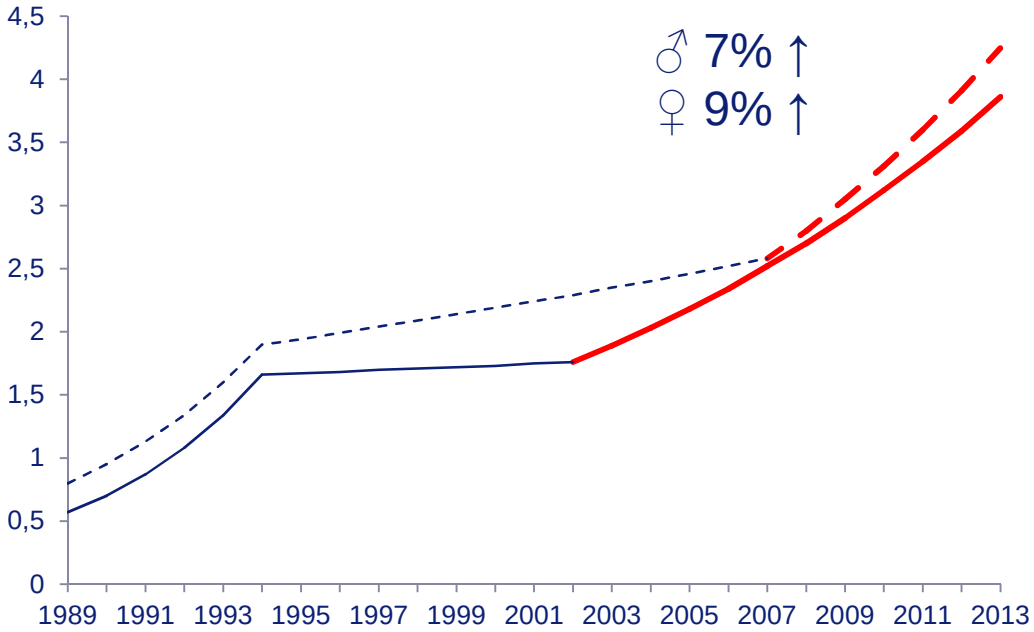


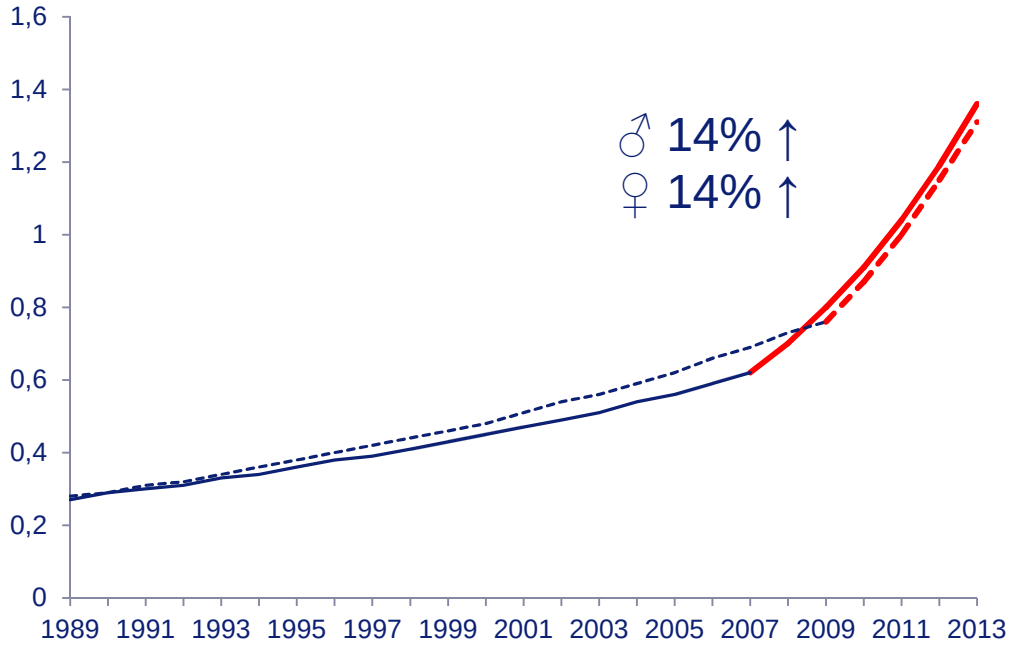
Trends in Incidence LM/LMM - Discussion

- True increase (UV exposure)

- Increased awareness

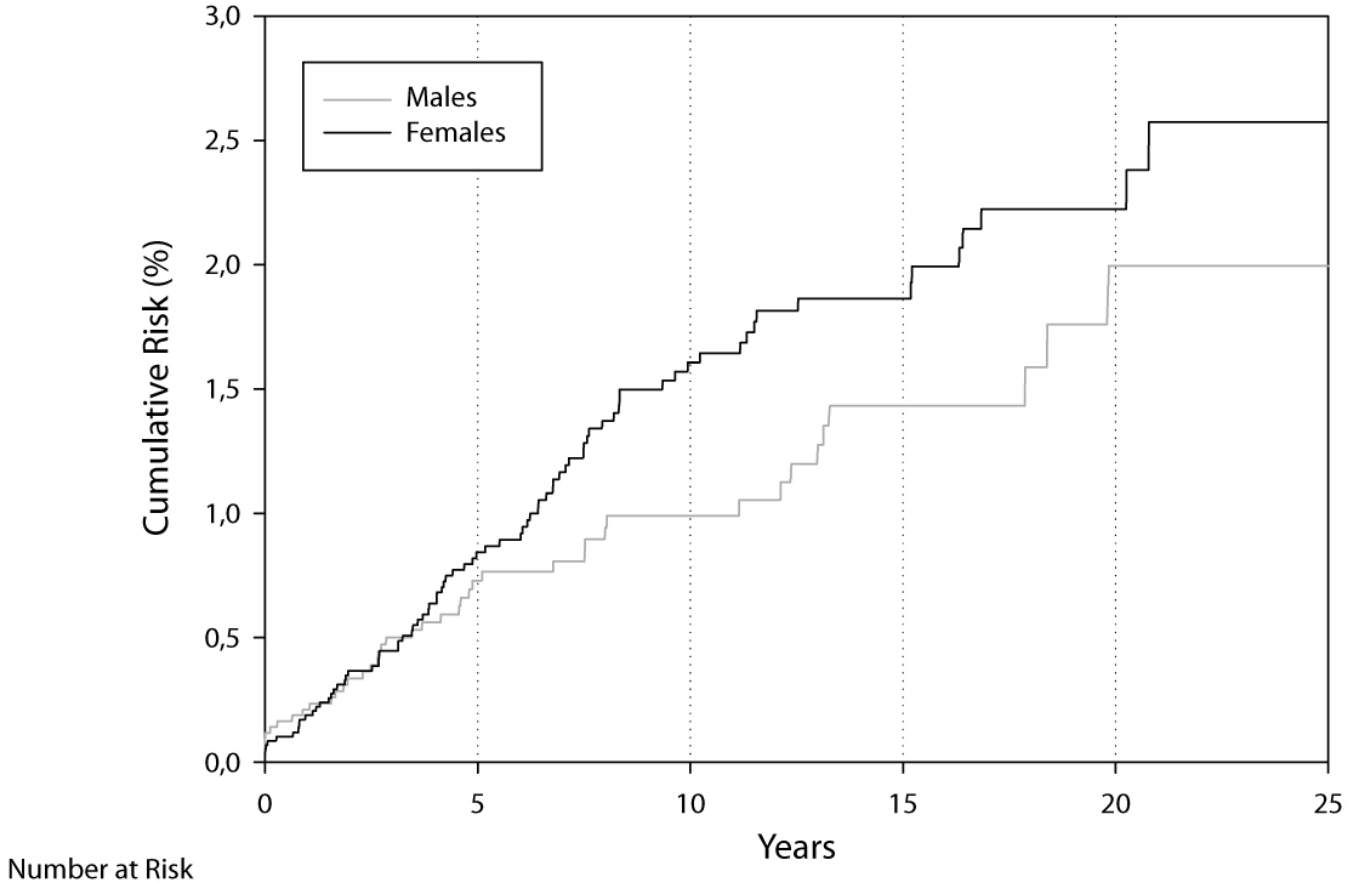
- Underreporting





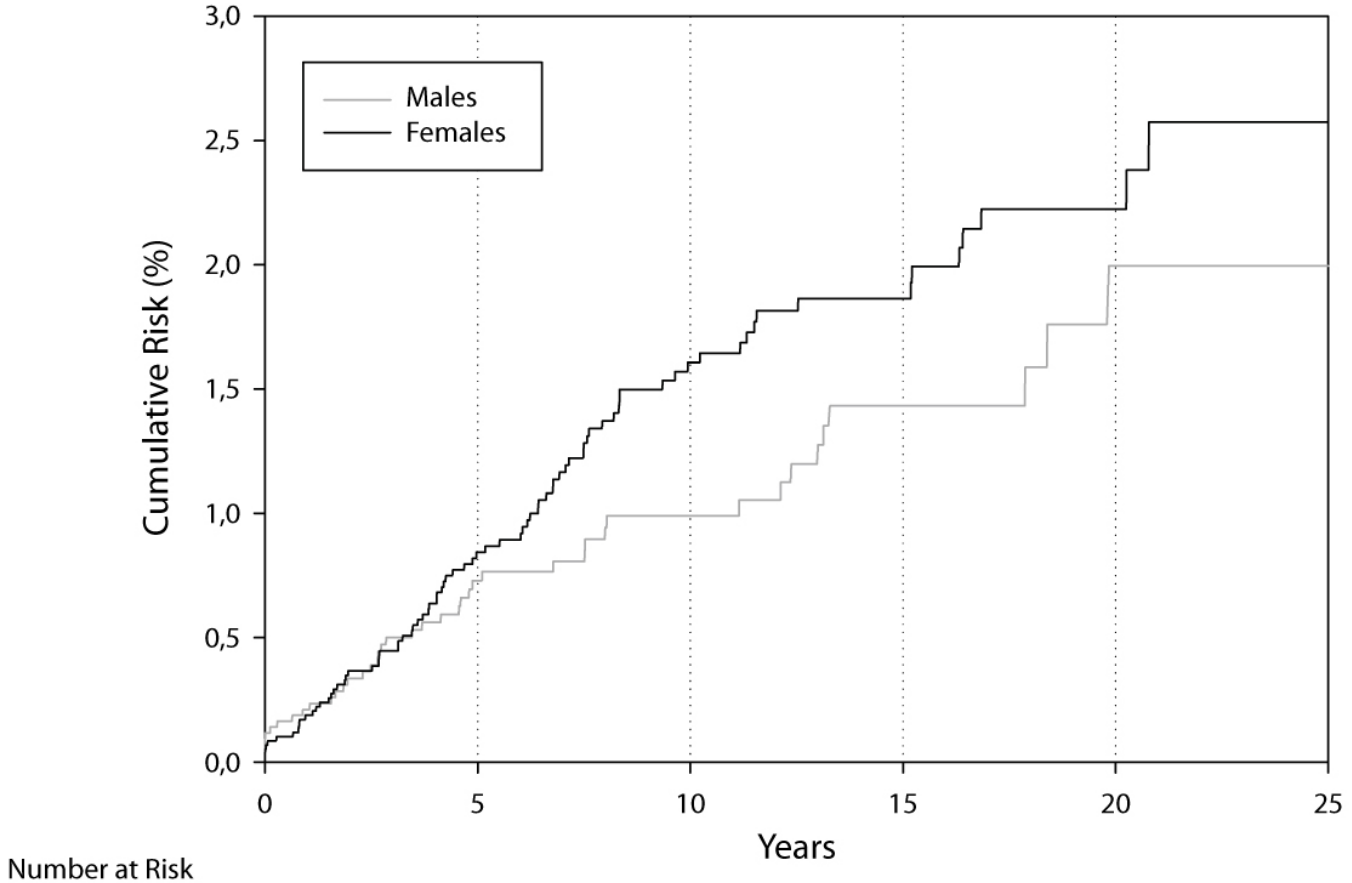
- True increase
  - Ultraviolet exposure

Cumulative Incidence Curve: LM → LMM



Number at Risk						
Males	4262	2357	1070	499	147	15
Females	5889	3619	1943	901	290	25

Cumulative Incidence Curve: LM → LMM



Number at Risk						
Males	4262	2357	1070	499	147	15
Females	5889	3619	1943	901	290	25

25-year risk: ♂ **2.0%** (95% CI, 1.2 – 2.8) ♀ **2.6%** (95% CI, 1.9 – 3.3)

Risk of Progression - Discussion

Overestimation?

- Non histologically confirmed LM

Underestimation?

- LMM without previous diagnosis of LM
- LM with unrecognized component of invasive melanoma

Conclusion

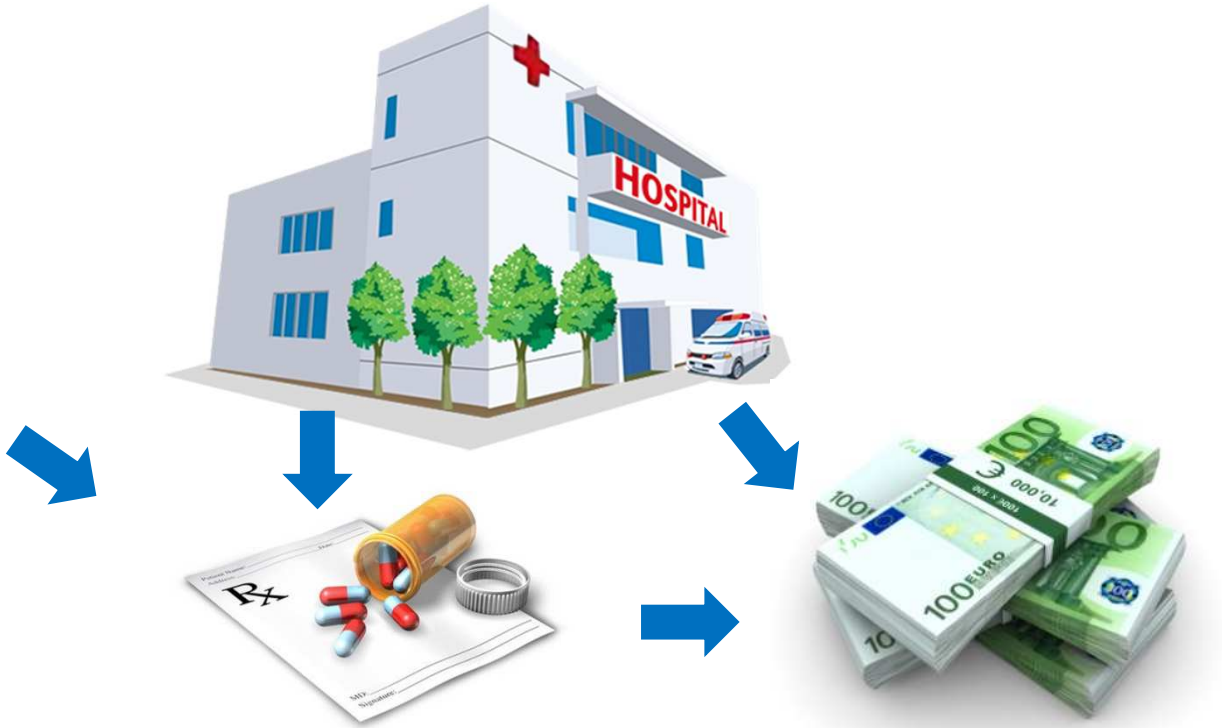
To assess trends in LM and LMM incidence between 1989 and 2013 in the Netherlands

- Incidence rates have increased

To estimate the risk of a subsequent LMM after a (histologically confirmed) LM

- Low (2-3% after 25-years)

Databases



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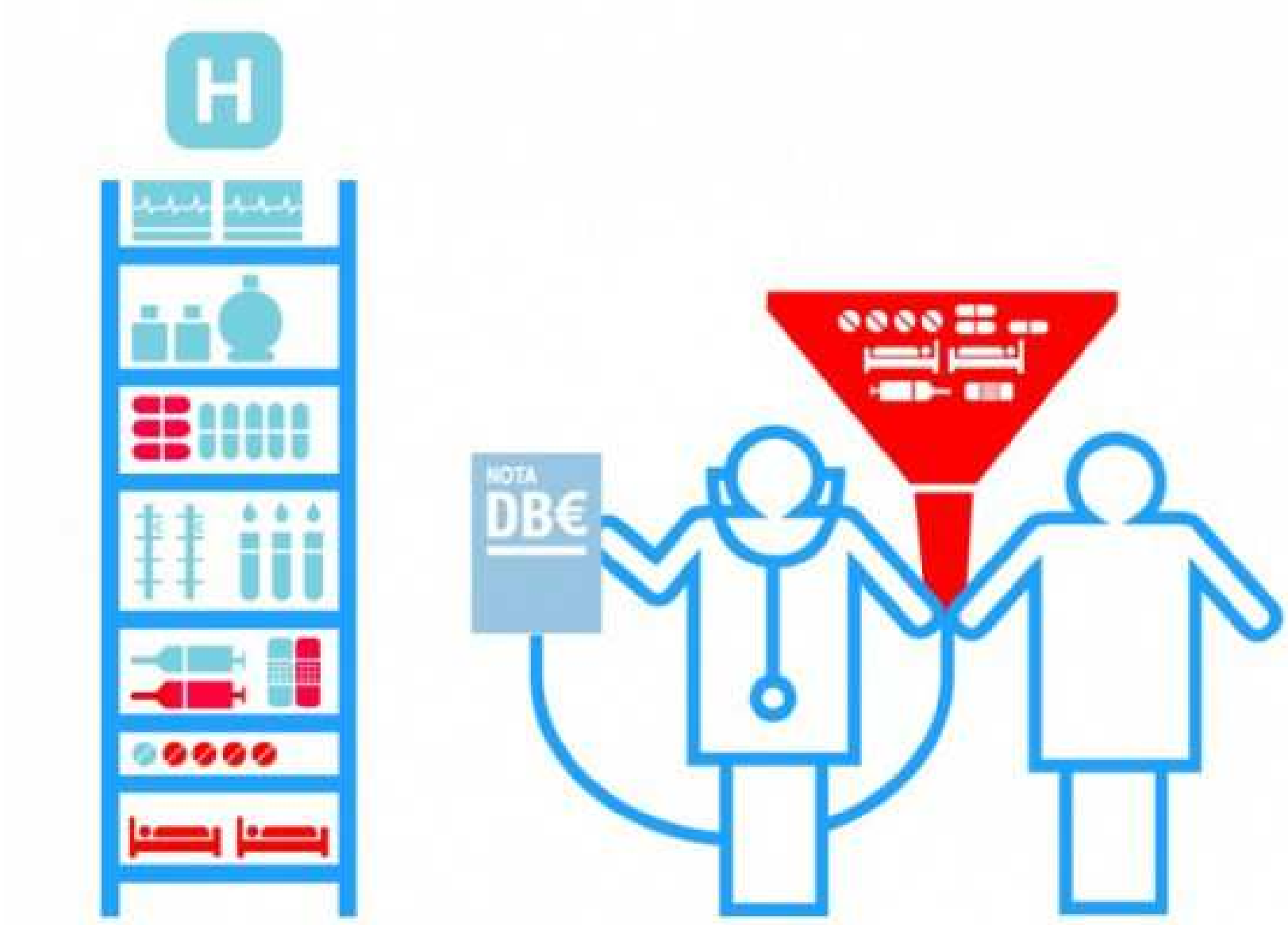
Claims data – mostly medical specialist care



Limitations

- Not very detailed (e.g. disease severity) vs large datasource.
- Incorrect coding (misclassification)
- linkage with pharmacy data?

HIGHLIGHTS AND CHALLENGES

Highlights

- Less time intensive
- Large sample size
- Relatively inexpensive
- Less susceptible to selection bias
- No opportunity for interviewer or recall bias

Challenges

- Routine data
- Lack information on disease severity
- Possible misclassification
- Lack information on some confounders
- Don’t include “over the counter” drugs
- Statistical knowledge

My tips for anyone considering this type of research

Two questions

Are the data adequate to answer your research question?

Are the data sufficiently accurate?

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China (2 databases)
Czech Republic (2 databases)
Denmark (5 databases)
Estonia (1 database)
Finland (4 databases)
France (26 databases)
Germany (18 databases)
Greece (2 databases)
Hong Kong (1 database)
Hungary (1 database)
Iceland (2 databases)
India (6 databases)
Ireland (2 databases)

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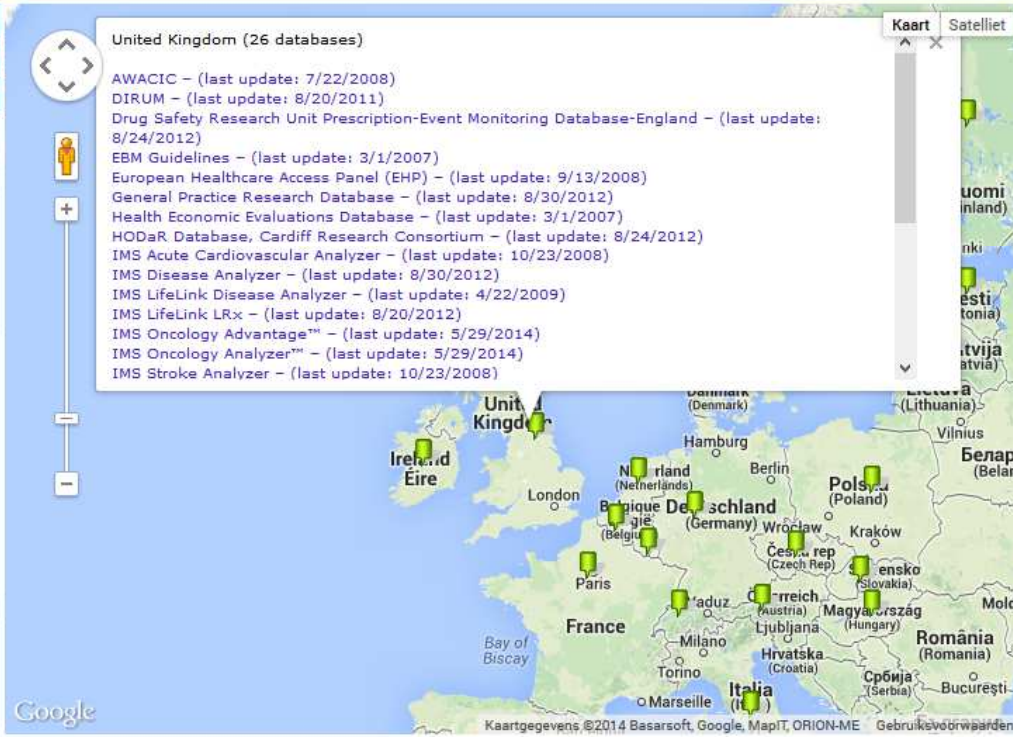

My top tips for anyone considering this type of research

- Find a great mentor....or three!
- Join a team with experience using these data sources
- Learn how to write code in SPSS, STATA,SAS, R
- Be prepared for frustrating weeks and lots of challenges

Acknowledgements

Dr. Karin Grevelingen
Drs. Sven van Egmond
Drs. Eline Noels

Dr. Loes Hollestein
Prof. Tamar Nijsten

Thank you

Any questions?

If you are interested....

Chat at one of the breaks or this evening

Or

Email: m.wakkee@erasmusmc.nl