

**New risks and injury causes –
challenges for prevention –
”How to find them in time”**

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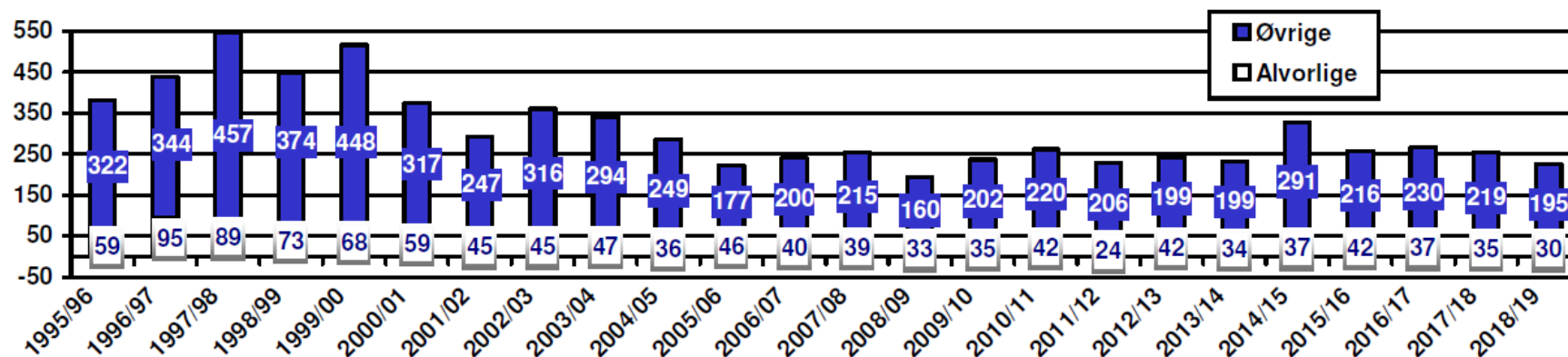
Identification of problems

EXAMPLES – DATA MINING AND TIME SERIES

Fireworks

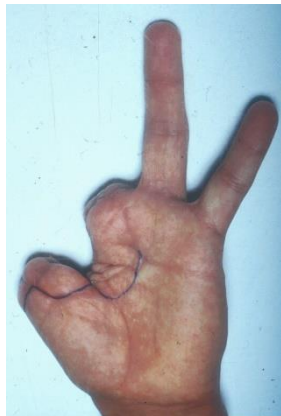


Fireworks in Denmark – December 31st and January 1st
(complete reporting for the whole country – population 5 mio.)



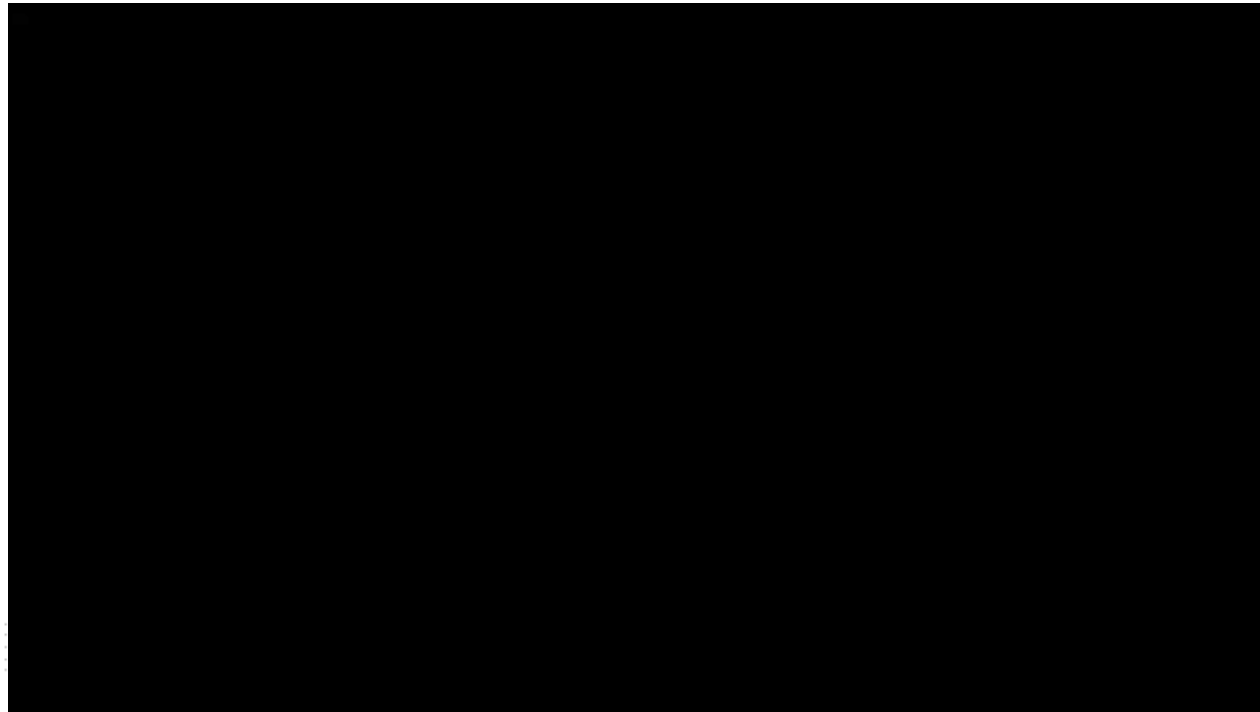
The rise in the mid 1990'ies detected about two years later, due to hand held illegal fireworks. Around 2008 new legislation due to the monitoring efforts based on our experience and public reporting.

We go public with the information.



Recent example – robotic lawn mower

<https://www.youtube.com/watch?v=8EqYUqF9Uv0>



Some have better safety features than other.

Recent example – robotic lawn mower

Case:

*1.5 year old girl moved onto
the lawn in a moment of parents
being unaware of her.*

*The lawn mower did NOT stop
but gave this injury !*



(Fortunately she fell to the side not in front of the machine)

So what did we do ?

We did this:

- 1 **Contacted the authorities** (Work inspection service). They would test the apparatus. Report is secret.
Due to license problems they would not tell us the force required for getting a CE (European Machine approval). That is what should make the machine stop and turn around. We could buy a copy of the standard for about 200 Euro (120 £)
- 2 **Made a public warning** via the press (shown widely)
- 3 **Contacted members of ICE**
(International Collaborative Effort in Injury Statistics)

ICE collaboration answers comes quickly

4 Date: Older

Sender	Subject	Date	Size	Action
Hagen Schmal	referat	ti 14-08-2018 15:31	53 ...	Indbakke
Hagen Schmal	kandidatspeciale	ti 14-08-2018 15:05	96 ...	Indbakke
Johan Lund	SV: Ang: Nordic questionnaire	ma 06-08-2018 09:20	72 ...	Indbakke
Ted Miller	Re: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 14:37	98 ...	Indbakke
Lauren Fortington	Re: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 09:00	71 ...	Indbakke
Rebecca Mitchell	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 08:58	91 ...	Indbakke
Jens Lauritsen	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 08:41	90 ...	Sendt post
Lisa Sharwood	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 07:01	80 ...	Indbakke
Rebecca Mitchell	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ti 03-07-2018 06:08	34 ...	Indbakke
Hedegaard, Holly (CDC/OPHSS/NCHS)	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 19:21	29 ...	Indbakke
Jens Lauritsen	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 16:52	30 ...	Sendt post
Ted Miller	Re: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 15:54	22 ...	Indbakke
boxbe-notifications@boxbe.com	Re: RE: robot lawn mowers and the International Collaborative Effort on I...	ma 02-07-2018 15:13	7 KB	Indbakke
Jens Lauritsen	RE: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 15:06	55 ...	Sendt post
YVETTE HOLDER	Re: SV: robot lawn mowers and the International Collaborative Effort on I...	ma 02-07-2018 04:00	65 ...	Indbakke
Alan Cook	Re: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 00:29	50 ...	Indbakke
Jens Lauritsen	SV: robot lawn mowers and the International Collaborative Effort on Injur...	ma 02-07-2018 00:05	49 ...	Sendt post
Belinda Gabbe	RE: robot lawn mowers and the International Collaborative Effort on Injur...	sø 01-07-2018 23:19	44 ...	Indbakke
YVETTE HOLDER	Re: robot lawn mowers and the International Collaborative Effort on Injur...	fr 29-06-2018 21:58	47 ...	Indbakke
Alan Cook	Re: robot lawn mowers and the International Collaborative Effort on Injur...	fr 29-06-2018 15:45	40 ...	Indbakke
Jens Lauritsen	RE: robot lawn mowers and the International Collaborative Effort on Injur...	fr 29-06-2018 10:34	25 ...	Sendt post
Jens Lauritsen	lawn mower child injuries - re publication in Pediatric Emergency Care	fr 29-06-2018 10:17	15 ...	Sendt post
Hagen Schmal	87314: Specialekontrakt	ti 26-06-2018 14:51	3 MB	Indbakke
Jens Lauritsen	RE: #87314: Specialekontrakt #87314: Contract - Master's Thesis	ti 26-06-2018 14:34	43 ...	Sendt post
Hagen Schmal	VS: #87314: Specialekontrakt #87314: Contract - Master's Thesis	ti 26-06-2018 14:13	12...	Indbakke
Frederik Borup Danielsson	anhandling version 6 ?	fr 15-12-2017 01:47	3 MB	Indbakke

Another recent example

(A patient had complete cut of first finger, plus lesion of finger 2-3 due to machine)

Machine
Safety

EU rule:

Secure against unexpected
start of sharp kitchen
appliances

So how did it go for our patient ?

Always here to help you

Register your product and get support at
www.philips.com/welcome



HR1393



So how does the double protection work ?

The problem is that the knife can
Rotate with an OPEN LID !!



Always here to help you

Register your product and get support at
www.philips.com/welcome



HR1393



So what did I (J.Lauritsen) do ?

Contact the authority

Contact Philips (no answer despite several re-mailing)

Contact authority again.

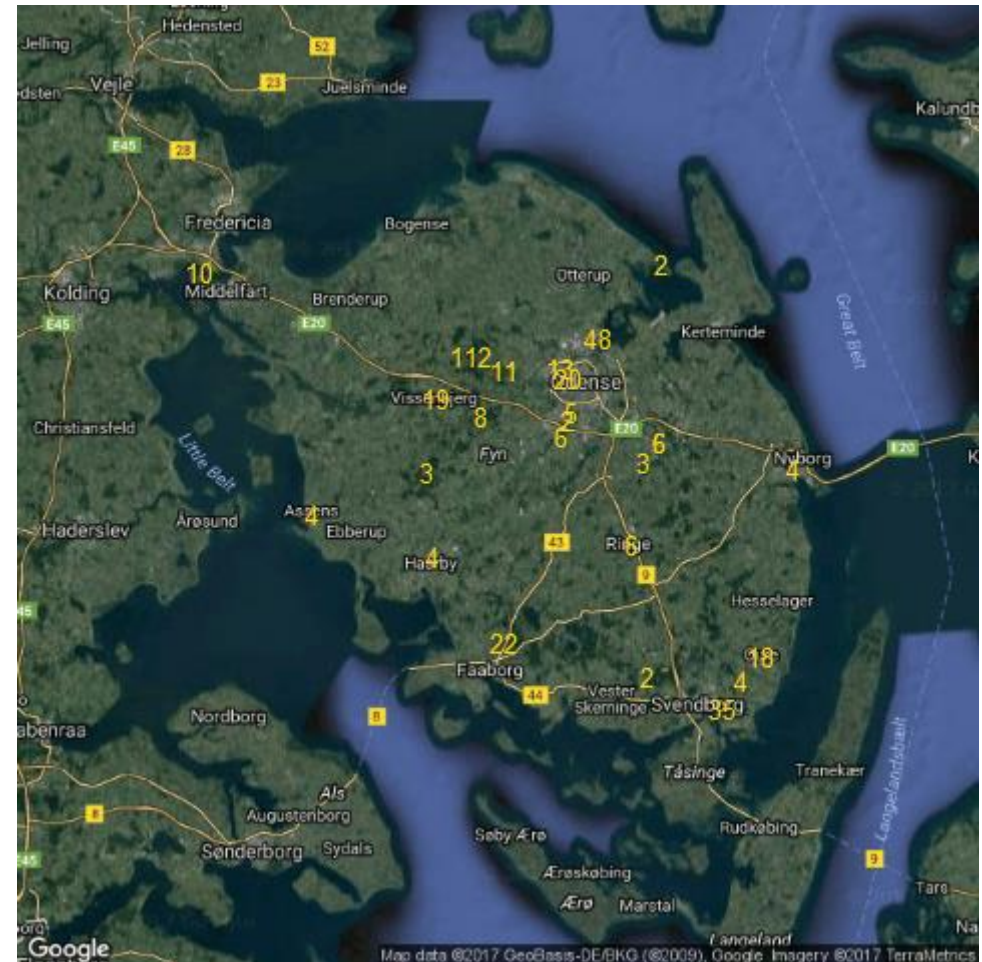
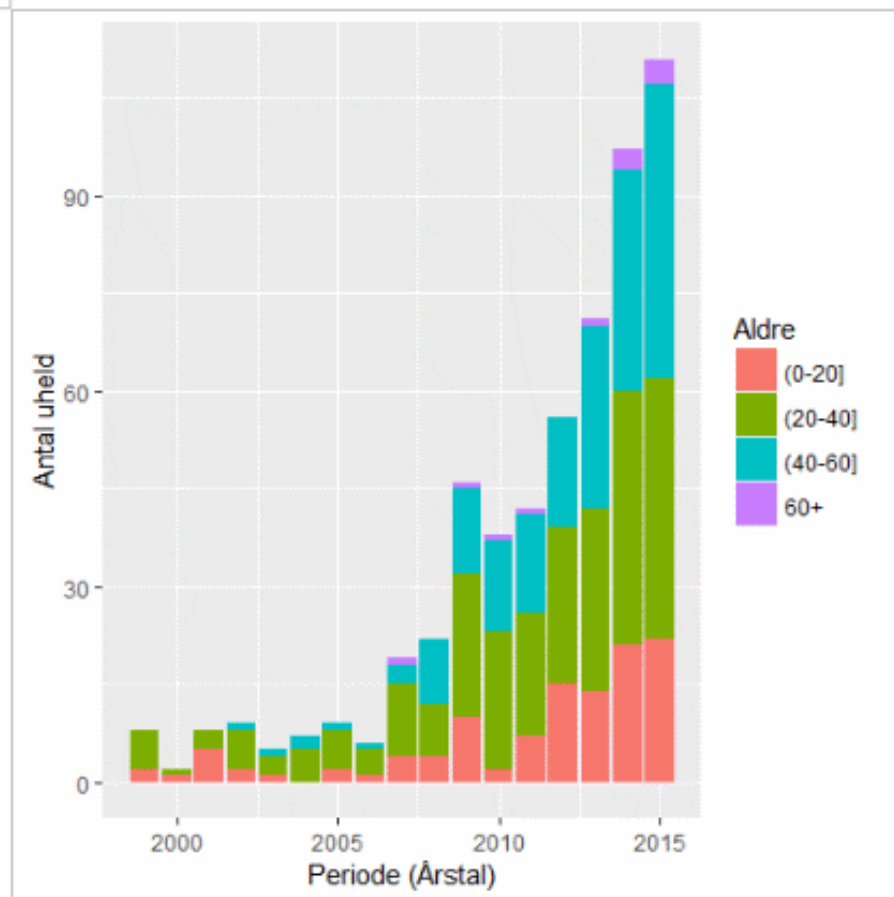
They received a new copy from Philips, sent to a “controlling laboratory authorised in EU”.

Answer : The machine IS compliant with the standard.

Question: should we accept standards that are negotiated with industry as the rule setting authority ?

(In this situation where a correctly protecting machine is ALSO sold by Philips at a cost of less than 5% higher)

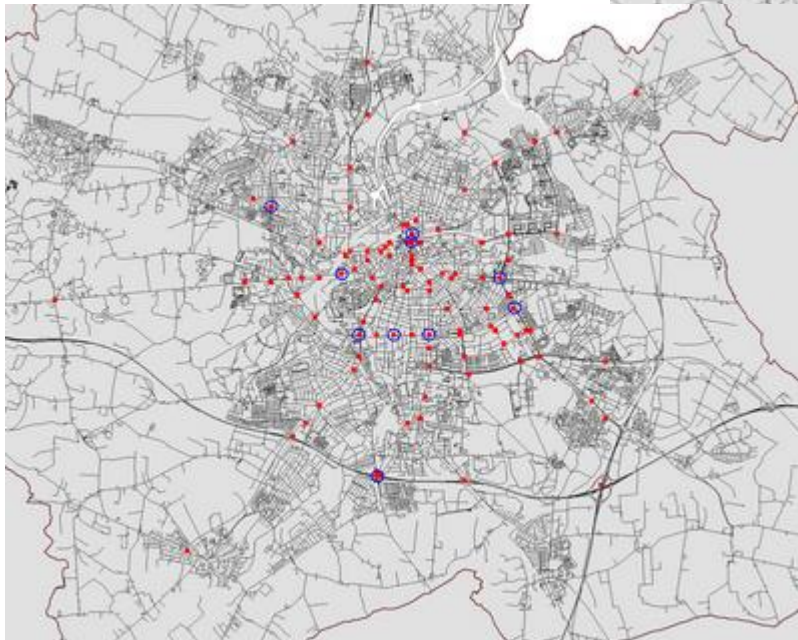
Case – mtb



New Mountain bike accidents – notice one spot (112)

Types of analysis

How to define black spots ?



Types of analysis

How to define black spots (statistically)?

Accident Analysis and Prevention 111 (2018) 147–154



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Identifying traffic accident black spots with Poisson-Tweedie models

Birgit Debrabant^a, Ulrich Halekoh^{a,*}, Wagner Hugo Bonat^b, Dennis L. Hansen^{c,d},
Jacob Hjelmberg^a, Jens Lauritsen^{c,d}

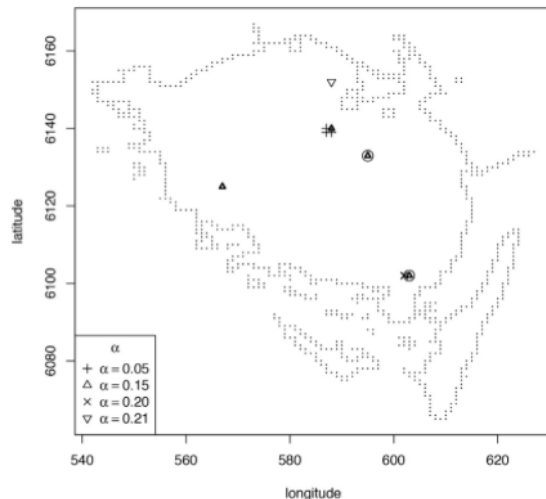
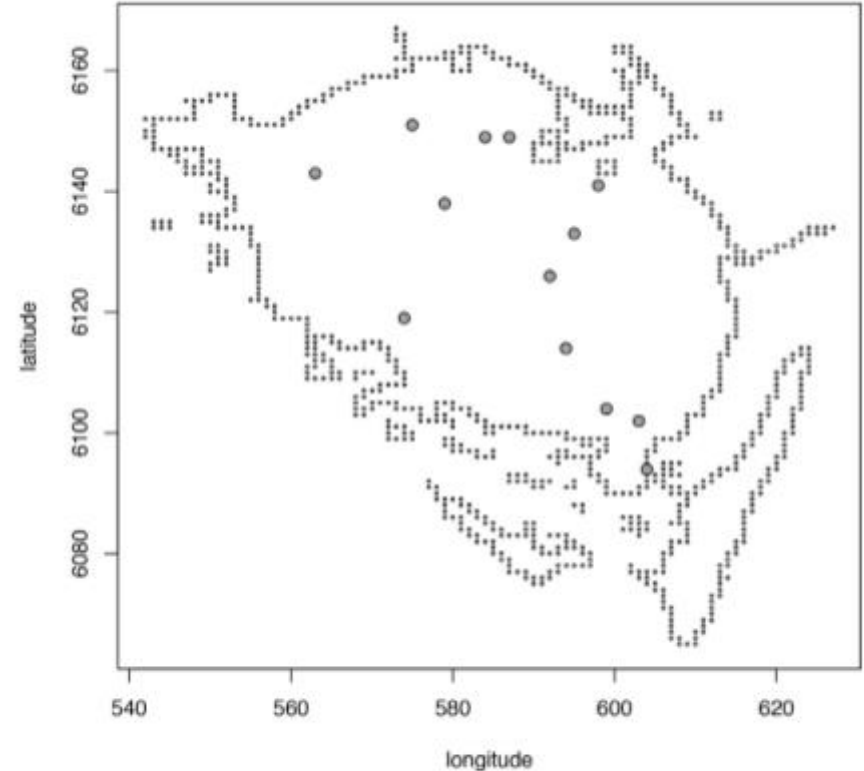


Fig. 6. Consistent black spots over six years with levels α smaller than 0.21. Locations with a lower level were also consistent black spots with a higher level. The two locations with a circle were also potential black spots in Fig. 5.



5. The 13 potential black spots with levels α below 0.0005. Adjusted family-wise r rates α_{FWER} ranged between 0.256 and 0.999.

13,924 traffic accidents
with verified location.



An emerging political new risk: Politicians without proper guidance select methods that are not validated or operational.

Valletta Declaration on Road Safety

29 March 2017
Valletta

8. The transport ministers will undertake to:

h) continue, efforts (2020 fatality reduction) ... work towards

(i) reducing the number of serious injuries in road traffic collisions,

(ii) reporting reliable and comparable data using a common definition based on the **MAIS 3+ trauma** scale by 2018;

i) set a target of **halving the number of serious injuries** in the EU by 2030 from the 2020 baseline **using this common definition** ...

1. Transport ministers of the Member States of the European Union, meeting in Valletta on 29 March 2017 under the Maltese Presidency of the Council of the European Union, reconfirm their commitment to improving road safety. The persistently high number of traffic fatalities (26 100



Conclusion – Safety Cube project

Table 7.6 Summary about record linkages

- All available information should be used (Police+Hospital+Other sources)
- Linking data can only be based on variables that are included in both (all) data sets.
- For most countries, MAIS ≥ 3 can only be assessed from hospital data. MAIS ≥ 3 casualties are mostly hospitalized and well reported in hospital data, but external causes derived from ICD are often missing or misspecified.
- The estimate of Serious Injuries (MAIS ≥ 3) based on a linking between Police and Hospital files and complemented with a Capture Recapture estimate for missing/ miscoded data gives the best indicator for the true number of serious injuries.

[Traffic Inj Prev](#). 2016 Aug 17;17(6):580-4. doi: 10.1080/15389588.2015.1128533. Epub 2016 Jan 19.

Understanding traffic crash under-reporting: Linking police and medical records to individual and crash characteristics.

[Janstrup KH](#)¹, [Kaplan S](#)¹, [Hels T](#)², [Lauritsen J](#)³, [Prato CG](#)¹.

So all in all how do we actually define a new problem or a new risk ?

Is this just a particular case of an emerging “black-spot” ?

Is it a new violation of good behaviour by less skilled persons ?
(and if so – should we address this ?)

Has anyone actually demonstrated statistical methods to find new causal aspects ?

Or are we still left with the “skilled clinical persons warning” ?
- and accepting this without reference to exposure ?

Are "Big data" a uniform solution ?

The short answer is NO

The somewhat longer: It depends on the problem under study

The full picture:

Just like a surgeon cannot set the indication for a given surgical procedure without testing and asking the patient.

No decision on emerging risks can be made without scope, purpose, strategy, organizational mapping and most of all by the observant clinician and quality assured registration.