

‘Increases in perinatal mortality in prefectures contaminated by the Fukushima nuclear power plant accident in Japan’

(S Hagen, K Mori, K Hayashi. Medicine2016;95:38)

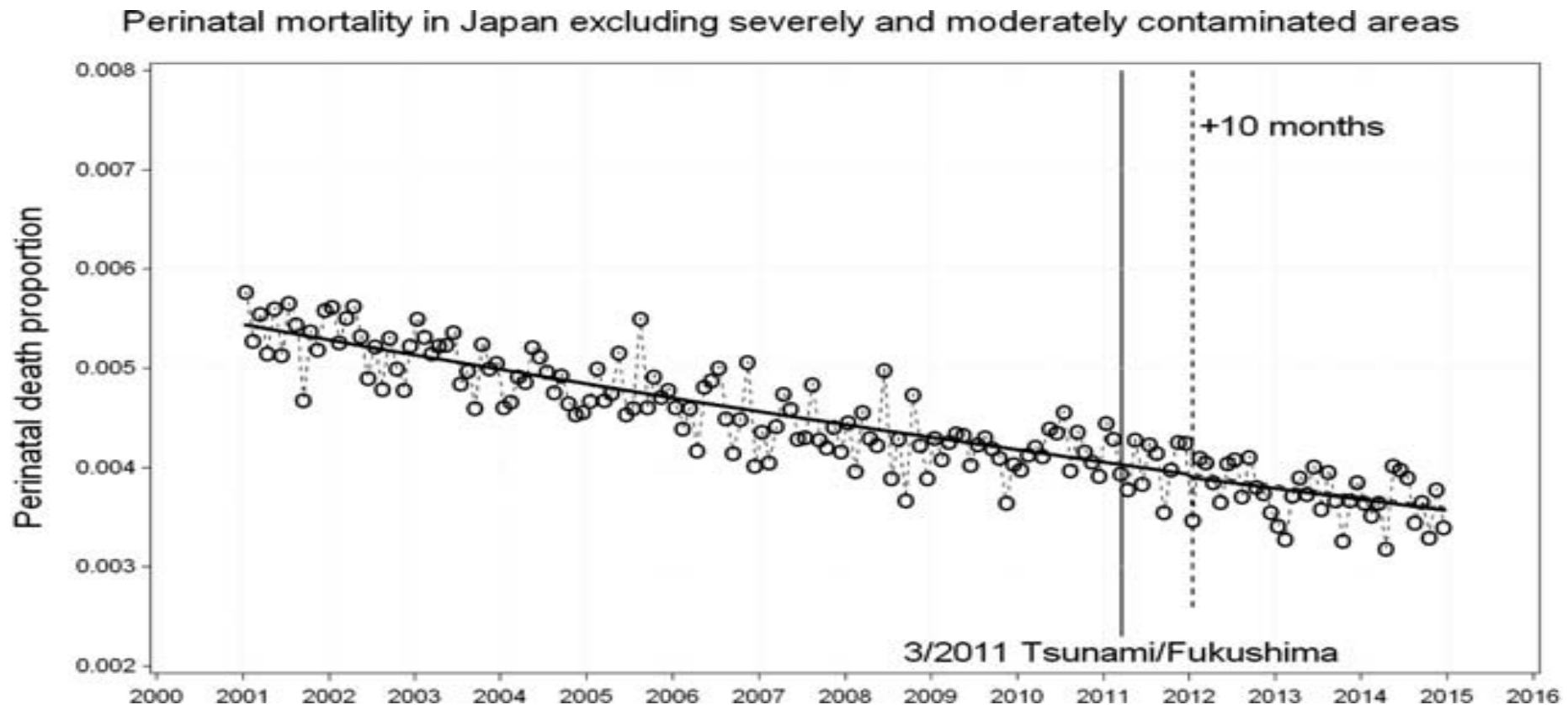
(‘perinatal death’ : **death of** fetus or the newborn after 22 weeks of pregnancy to 7 days after birth which is one of the most reliable data in Japan)

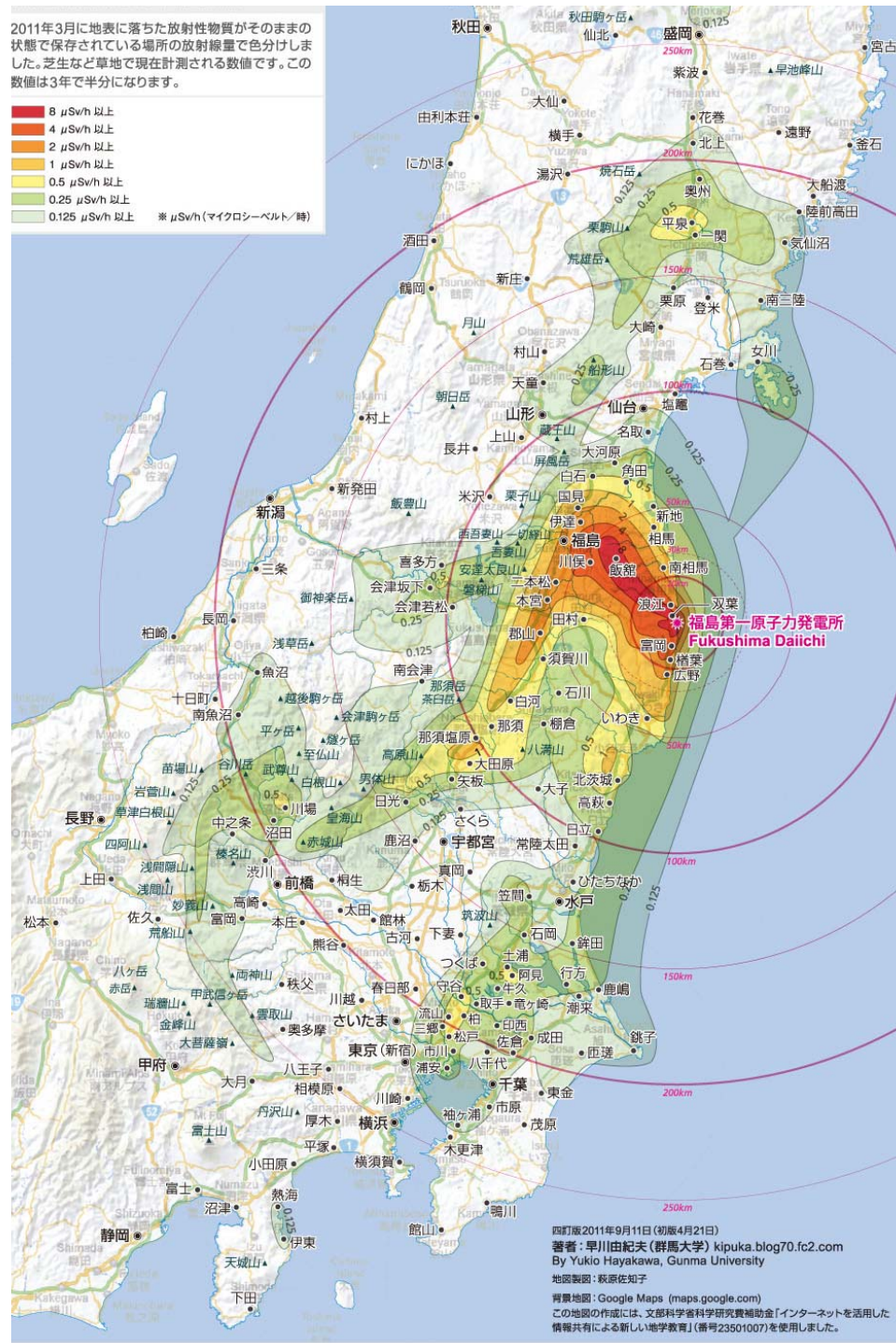
医療問題研究会IMONKEN

Keiji Hayashi

- Descriptive observational studies showed upward jumps in secular European perinatal mortality trends after Chernobyl.
- The question arises whether the Fukushima nuclear power plant accident entailed similar phenomena in Japan.
- We used data from the survey report of the Ministry of Health, Labor and Welfare ("e-STAT") to 2001-2014.
- Statistical analysis was done by Hagen Scherb (Helmholz Zentrum Munchen, German Research Center for Environmental Health, Institute of Computational Biology).

Monthly perinatal mortality in Japan excluding the 6 severely and 3 moderately affected prefectures.
The white circle is the monthly perinatal mortality rate, which **shows reduction** by about 4% (OR=0.96) annually.
Data from 2001 to the end of 2014.
There is no change before and after the accident.



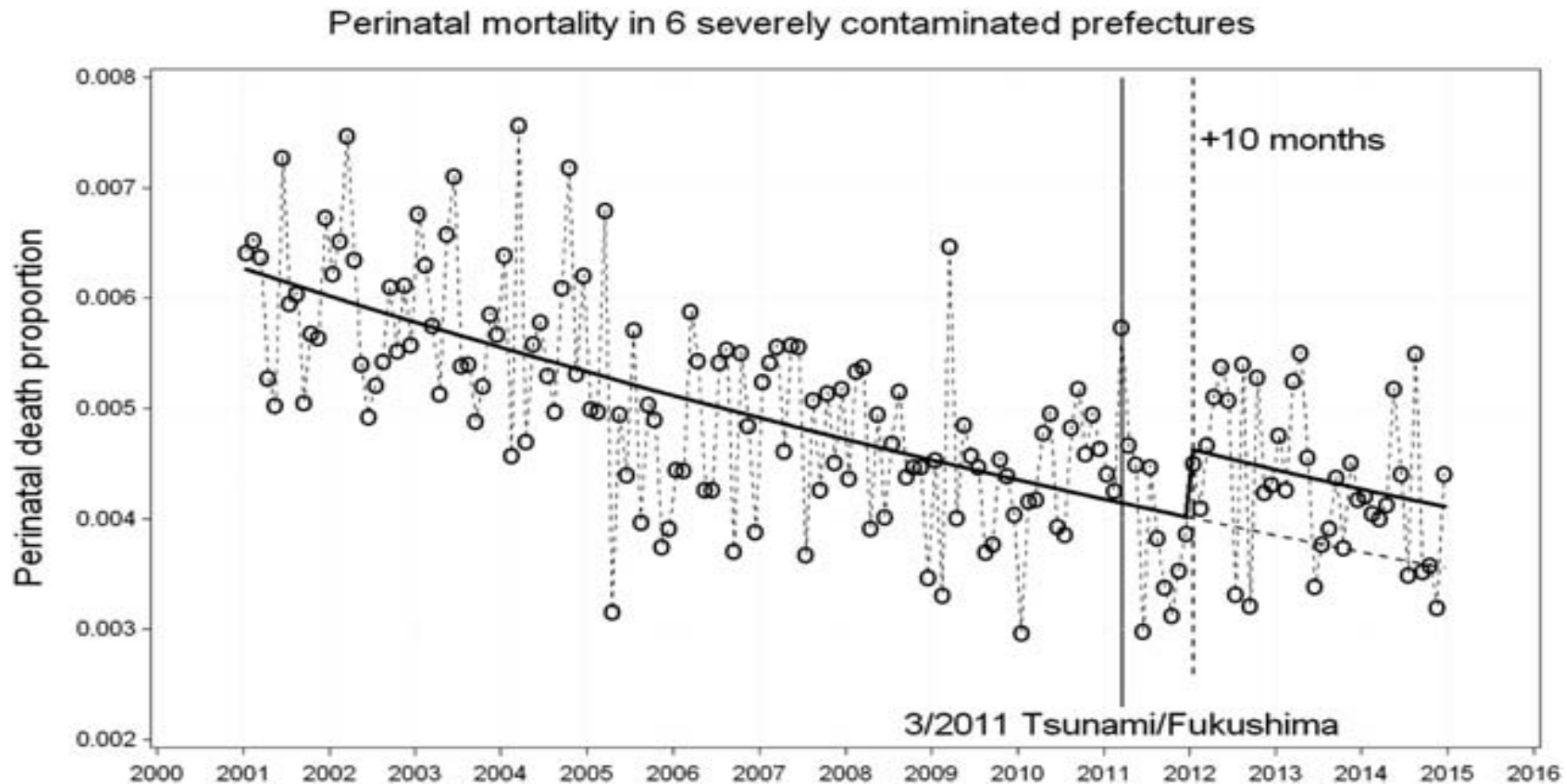


Pollution degree map in
December 2011 (created by
Yukio Hayakawa, Gunma
University).

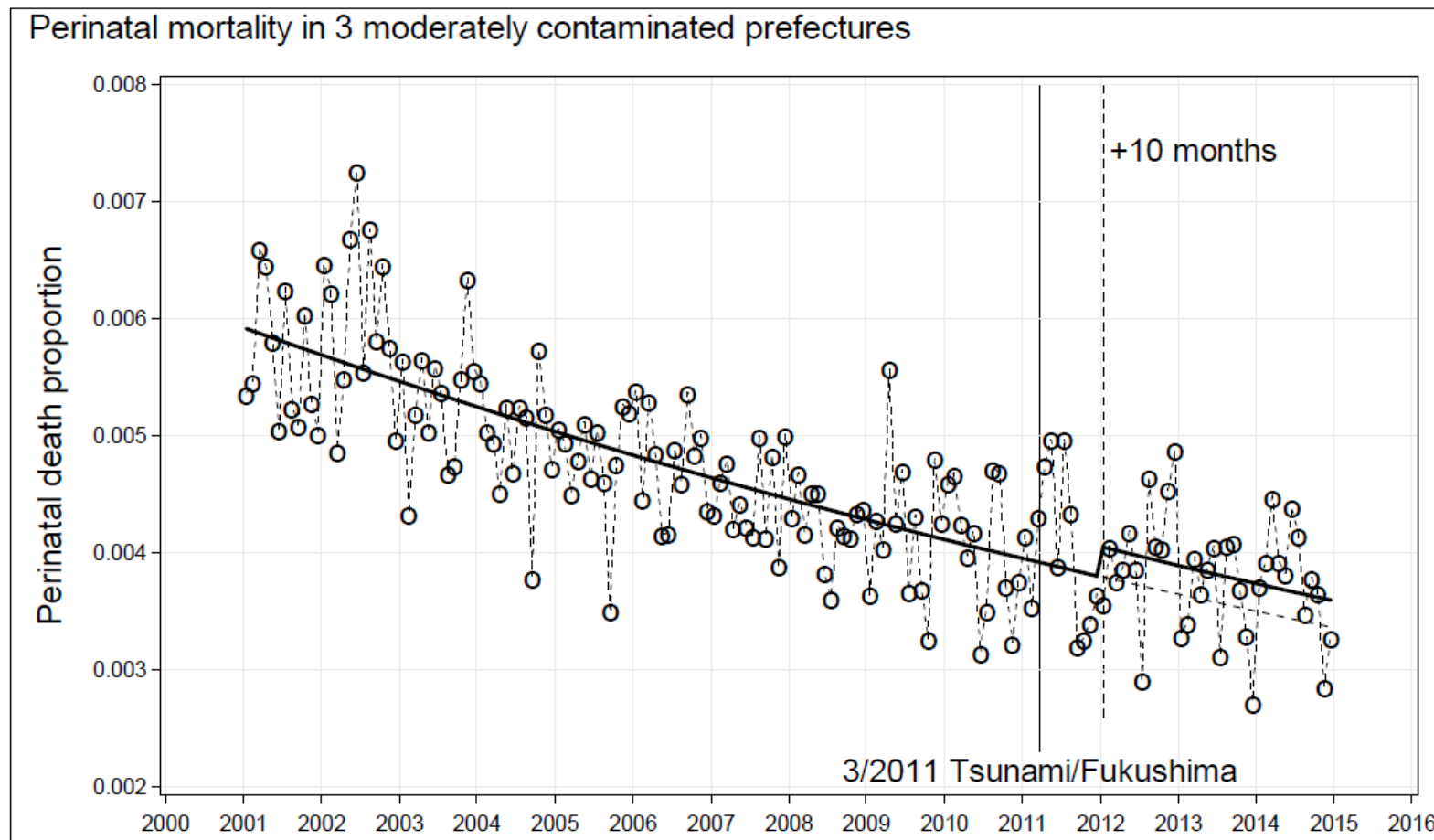
Six prefectures Fukushima
Iwate, Miyagi, Ibaragi, Tochigi,
Gunma, with many areas of
0.25 $\mu\text{Sv/h}$ or more.

The lesser areas of Chiba,
Saitama and Tokyo are
considered to be "moderately
contaminated areas".

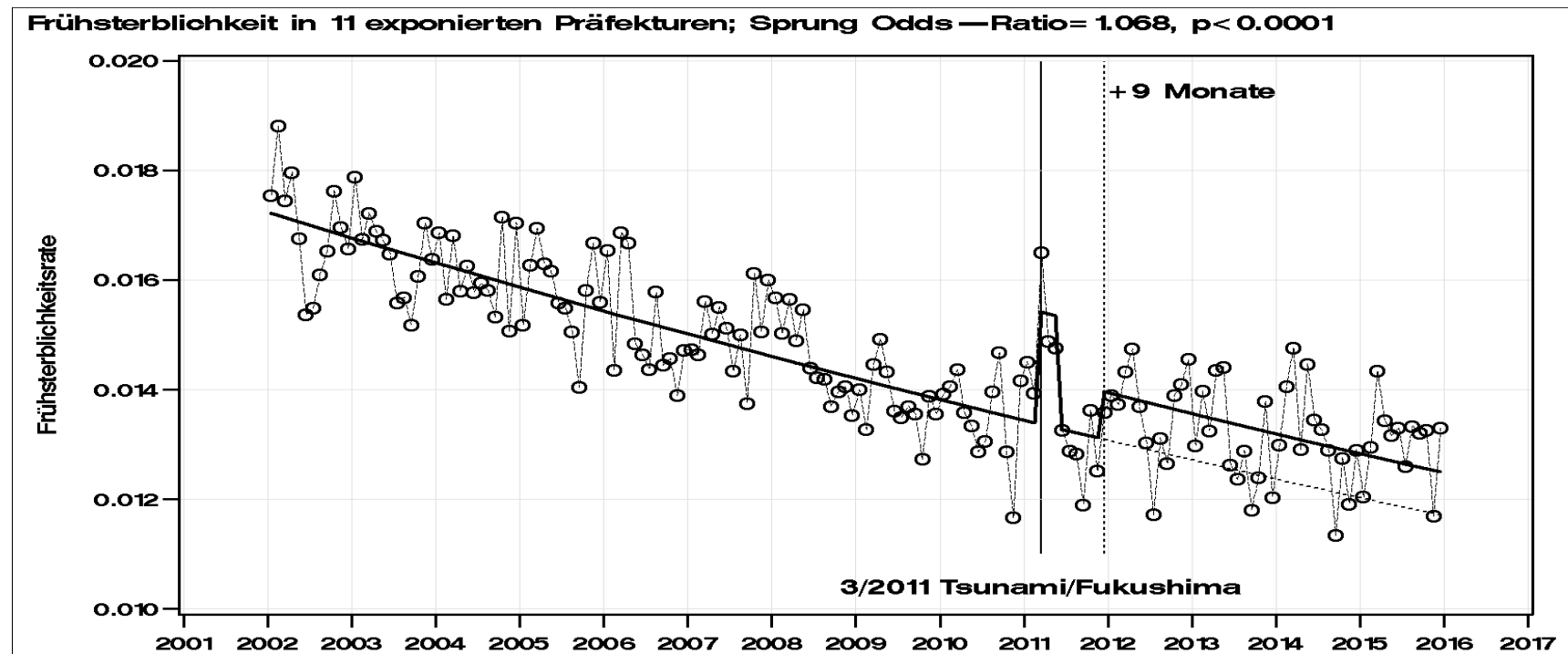
**Monthly perinatal mortality in 6 severely contaminated prefectures
(Fukushima, Miyagi, Iwate, Ibaragi, Gunma, Tochigi)
Estimating a jump 10 months after the Fukushima accident yields the
upward jump OR 1.156(95%CI;1.061 to 1.259)
The jump in the perinatal mortality proportion form January 2012 to
December 2014 may be translated into 165 excess case.**



3 moderately contaminated prefectures: Chiba, Saitama, Tokyo. The estimated jump 10 months after the accident yields an OR of 1.068 (95%Ci;1.001 to 1.139)
The effect translates into 153 excess perinatal death cases.



Monthly mortality of fetus and infants between 12 weeks after pregnancy and less than 1 year old in 11 moderately and severely contaminated prefectures, additionally including Niigata and Yamagata. Estimating a jump 10 months after the Fukushima accident yields the upward jump OR 1.068(95%CI;1.035 to 1.101) The jump in the mortality proportion during 4 years (form January 2012 to December 2015) may be translated into 1140 excess case.



Perinatal death is one of the most reliable numbers, as fetuses after 22 weeks must be delivered. However, the actual situation of the damage is more obvious, considering there could be many people who died “between 12 weeks and less than 1 year old” including perinatal death.

Nationwide Increase in Complex Congenital Heart Diseases After the Fukushima Nuclear Accident

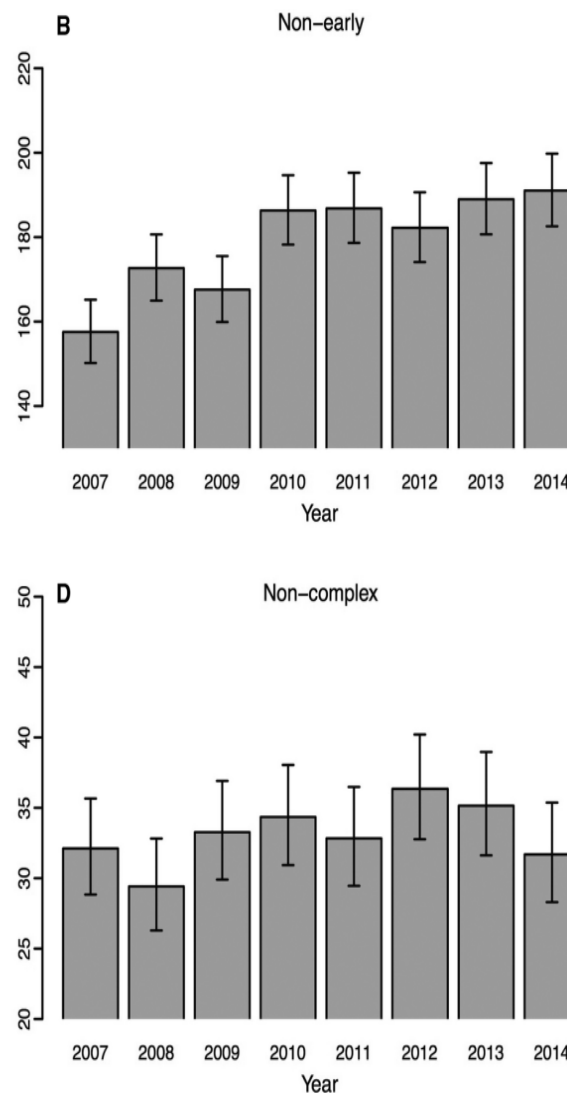
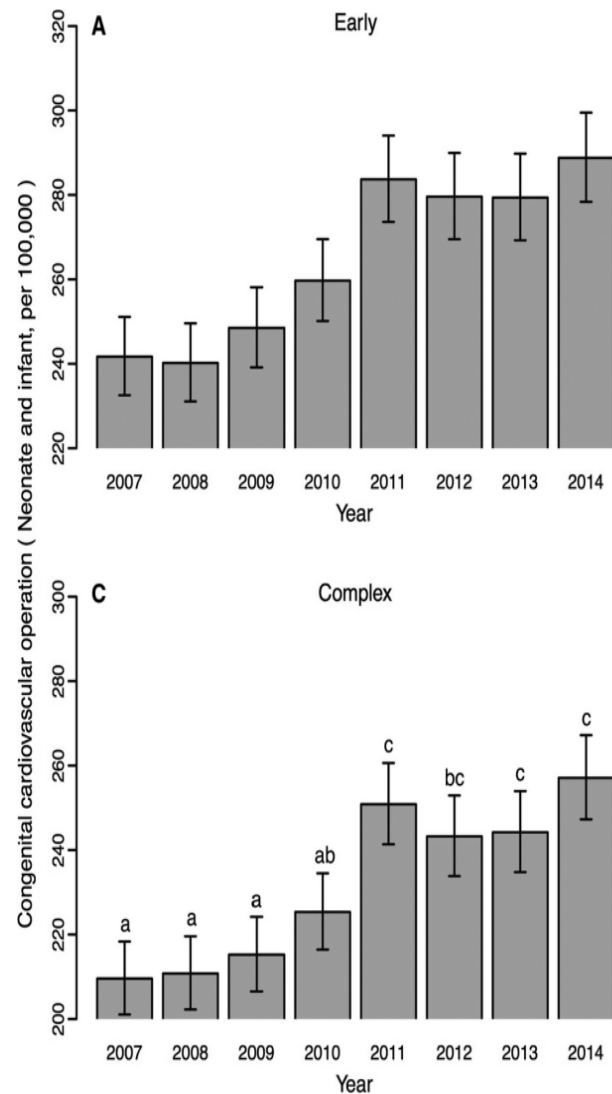
Kaori Murase Joe Murase Akira Mishima

Journal of the American Heart Association. 2019;8

A: 'early' : pre- organogenesis period, except for “coronary disease” and “others.

C: 'Complex' : the complexity of the malformation

In A and C, the number of operations has increased since 2011.



A 'early' and C 'complex' are more life threatening heart disease than others. An increase in A and C are likely to be one of the causes of an increase in perinatal mortality.

Because it is the number operated, it is likely to die later, and the rise in mortality may be in 2012.

Increase in Cryptorchidism which cannot be diagnosed before birth.

Therefore, there is no impact of
artificial abortion.

Discharge rate (per 10
million) after
cryptorchidism surgery

It has increased since
fiscal 2012.

This data also indicates
the occurrence of
radiation-induced
malformation, and
supports the increase
in perinatal mortality.

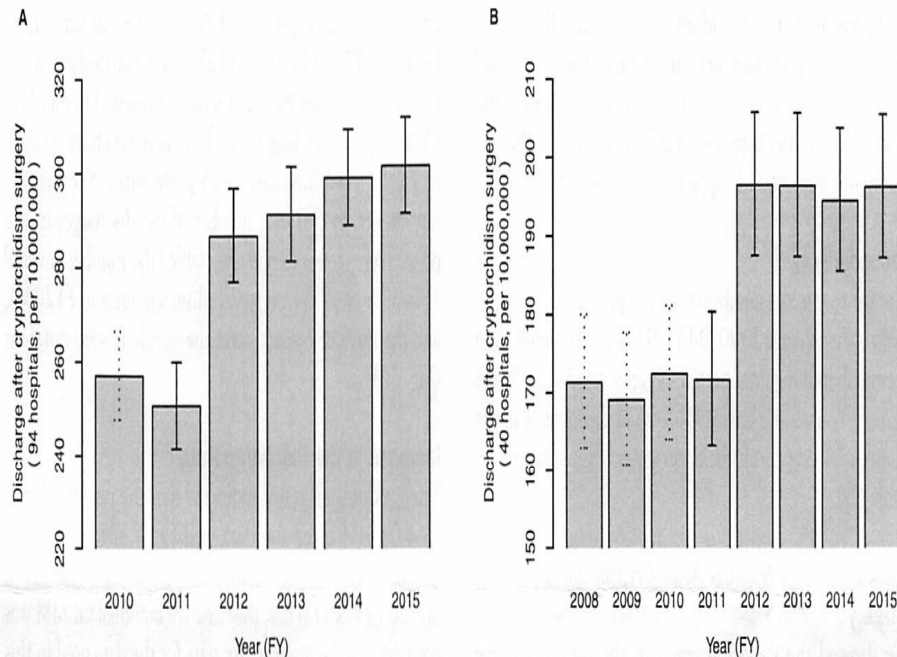


Figure 2. Discharge rate after cryptorchidism surgery (6-year and 8-year data). The number of discharges after cryptorchidism surgery (per 10 million persons) are presented. **(A)** FY2010-FY2015 (total cases from 94 hospitals). **(B)** FY2008-FY2015 (total cases from 40 hospitals). In FY2010, the number of discharges is multiplied by 4/3 because only 9 months of data were available for that year, and in FY2008 and FY2009, the number is multiplied by 2 because only 6 months of data were available. The discharge number was assumed to follow a Poisson distribution; thus, 95% CIs are also displayed. The CIs in FY2008, FY2009, and FY2010 are displayed with dotted lines because they are based on the multiplied numbers. CI, confidence interval.

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Nationwide increase
in cryptorchidism
after the Fukushima
nuclear accident.
Urology 2018;118:65-
70

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Increases in perinatal mortality in prefectures contaminated by the Fukushima nuclear power plant accident in Japan

A spatially stratified longitudinal study

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Abstract

Descriptive observational studies showed upward jumps in secular European perinatal mortality trends after Chernobyl. The question