Five years of clinical index use to value pollinosis severity in France

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Subject

The RNSA (French network of aerobiology monitoring) works with one network of allergists, existing for more than 10 years. Since 2006, these physicians have established with the RNSA a weekly clinical index.

This index is used with pollen, phenological and meteorological data to make a weekly pollen bulletin. This index is based on the number of patients coming in consultation, the type of symptoms, their severity and allows to get information of the patients by their patrician.

The purpose of this study is to bring to light the use of the clinical index to measure the health impact of pollens on the population. Five years of clinical data allow to begin a geographical and temporal comparison.

The RNSA have 70 pollen traps (Hirst type) working throughout France. The particles in the air are impacted on a tape fixed on a cylinder turning continuously while a week. The analysis of this tape by optical microscope allows to get information on daily pollen concentrations.
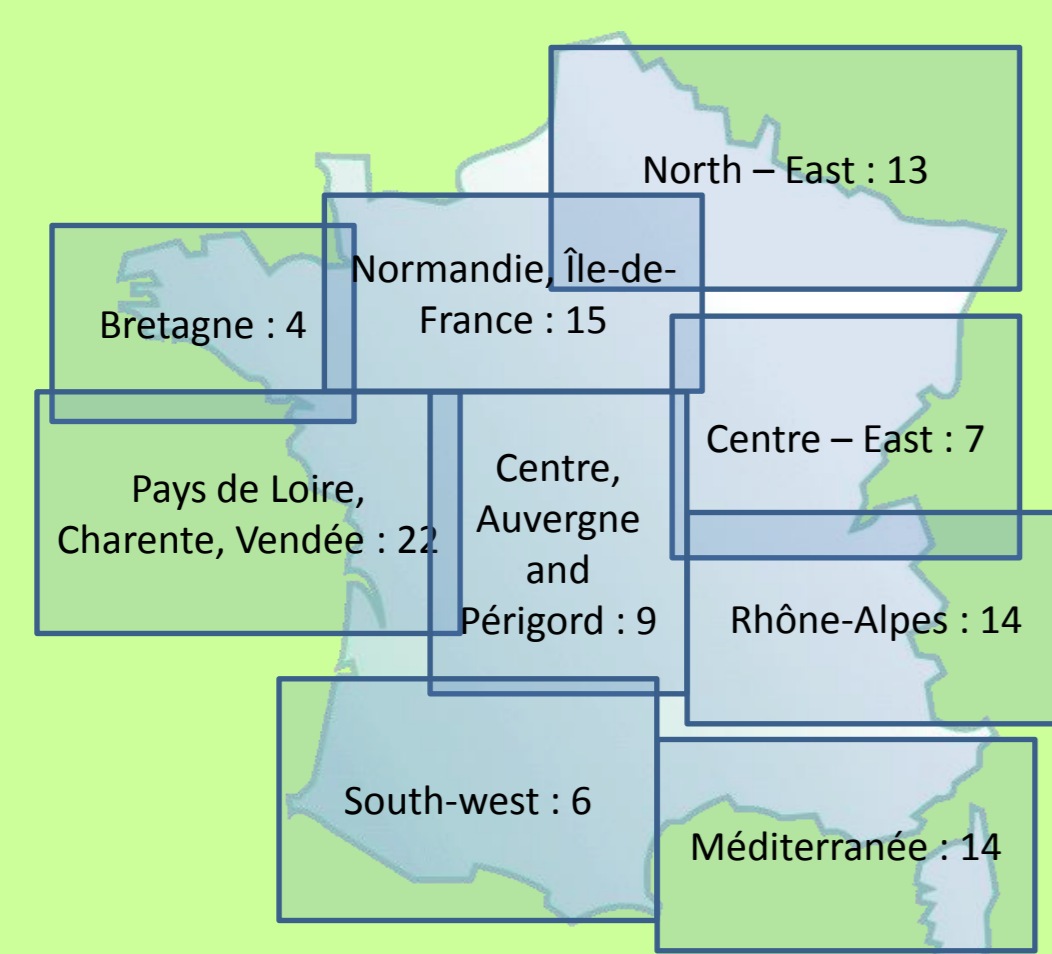
The weekly pollen index corresponds to the accumulation of daily data of one week.

Clinical bulletin

Every week, physicians of the network receive by e-mail the clinical bulletin. On this bulletin, physicians give information about the pollinosis number (**1**), the evolution with regard to the previous week (**2**) and the intensity of symptoms (**3**) noticed in their patients.

Physicians distribution map

North – East : 13
Normandie, Île-de-France : 15
Bretagne : 4
Pays de Loire, Charente, Vendée : 22
Centre, Auvergne and Périgord : 9
Centre – Est : 7
Rhône-Alpes : 14
South-west : 6
Méditerranée : 14

Clinical bulletin

Clinical index

The 4 chosen criteria for the quotation of symptoms are :

- disabilitating
- diurnal
- nocturnal
- repercussions on work

- 0 criterion corresponds to NULL
- 1 or 2 criteria correspond to WEAK
- 3 criteria correspond to MEAN
- 4 criteria correspond to STRONG

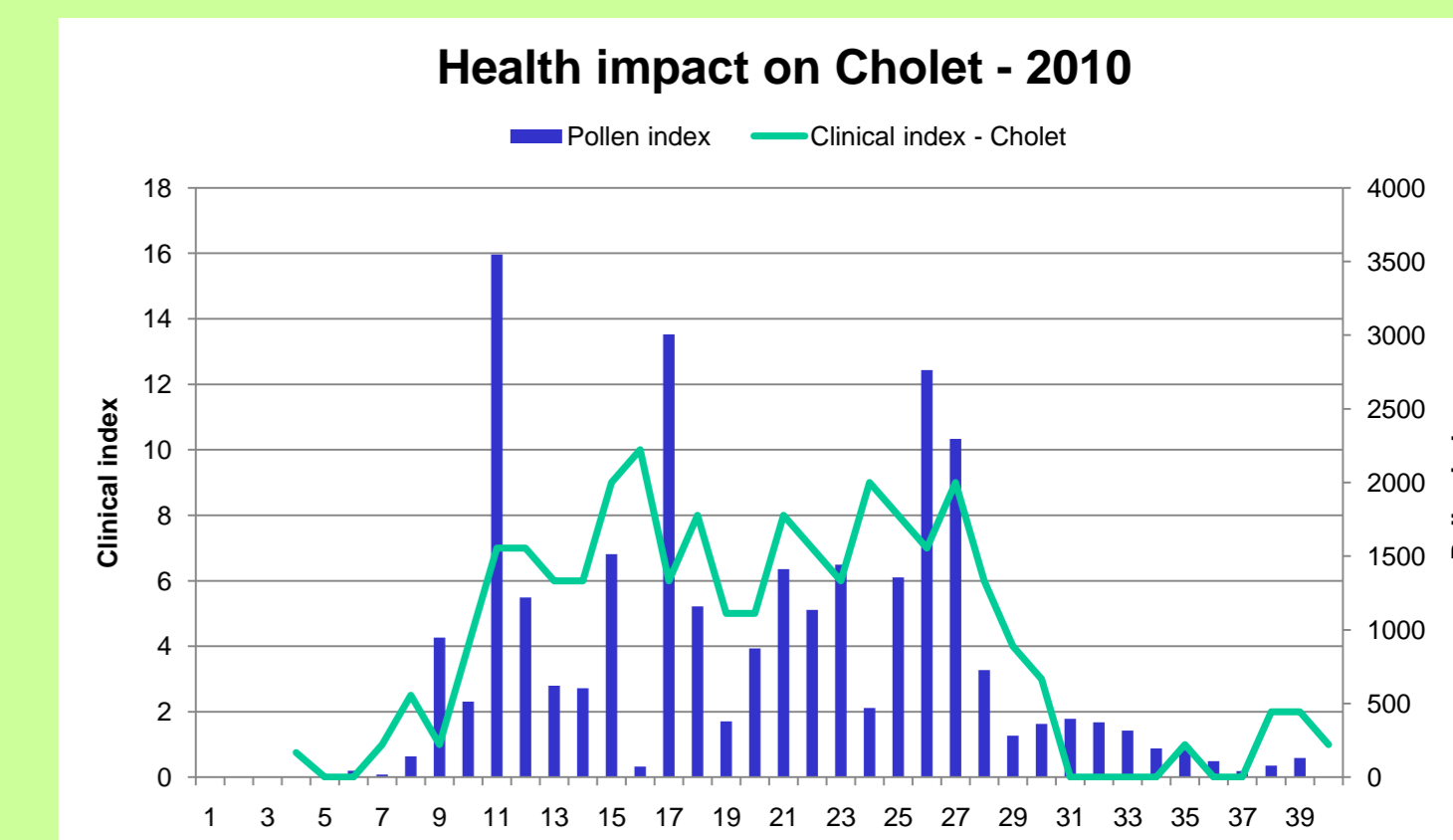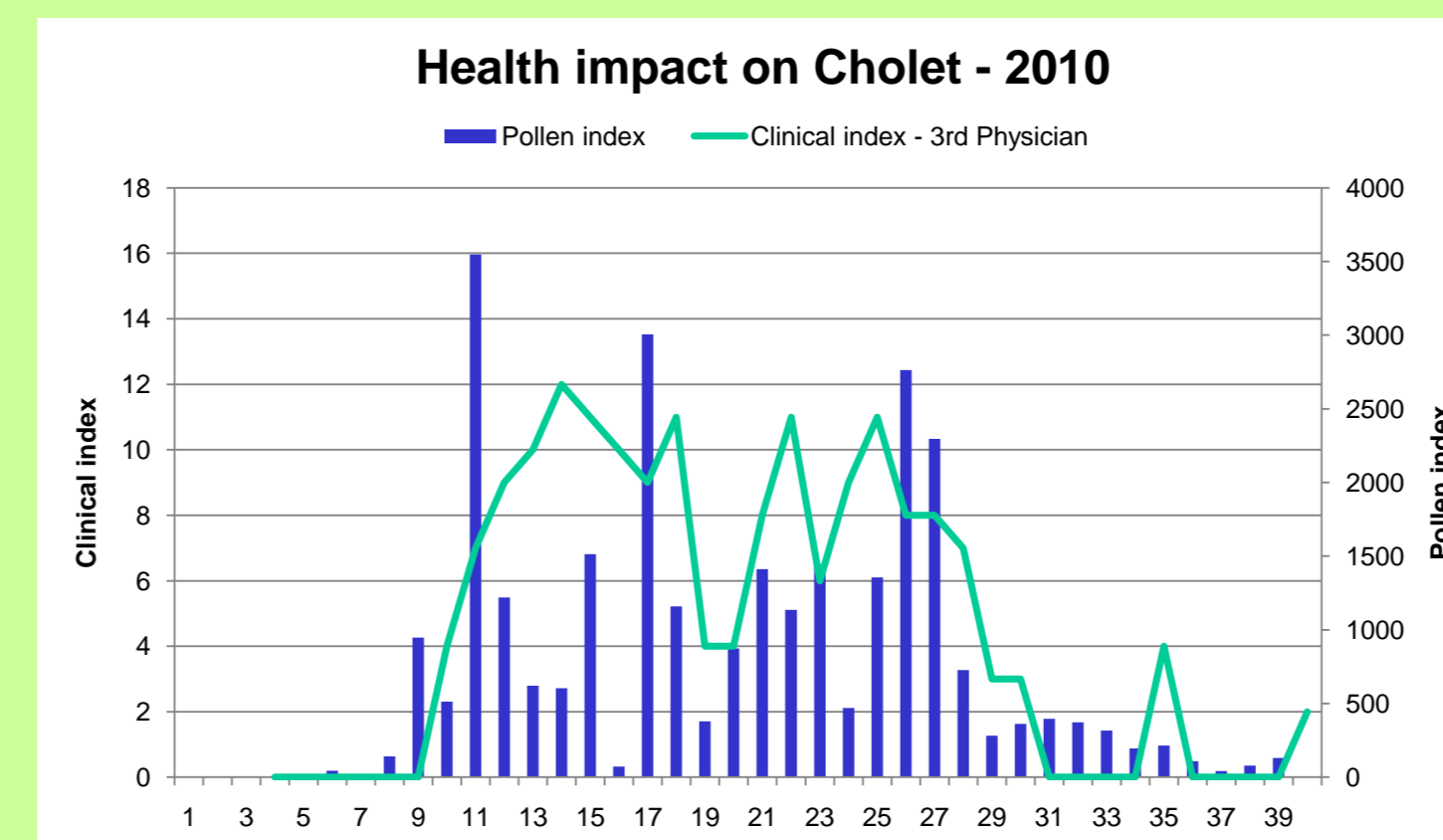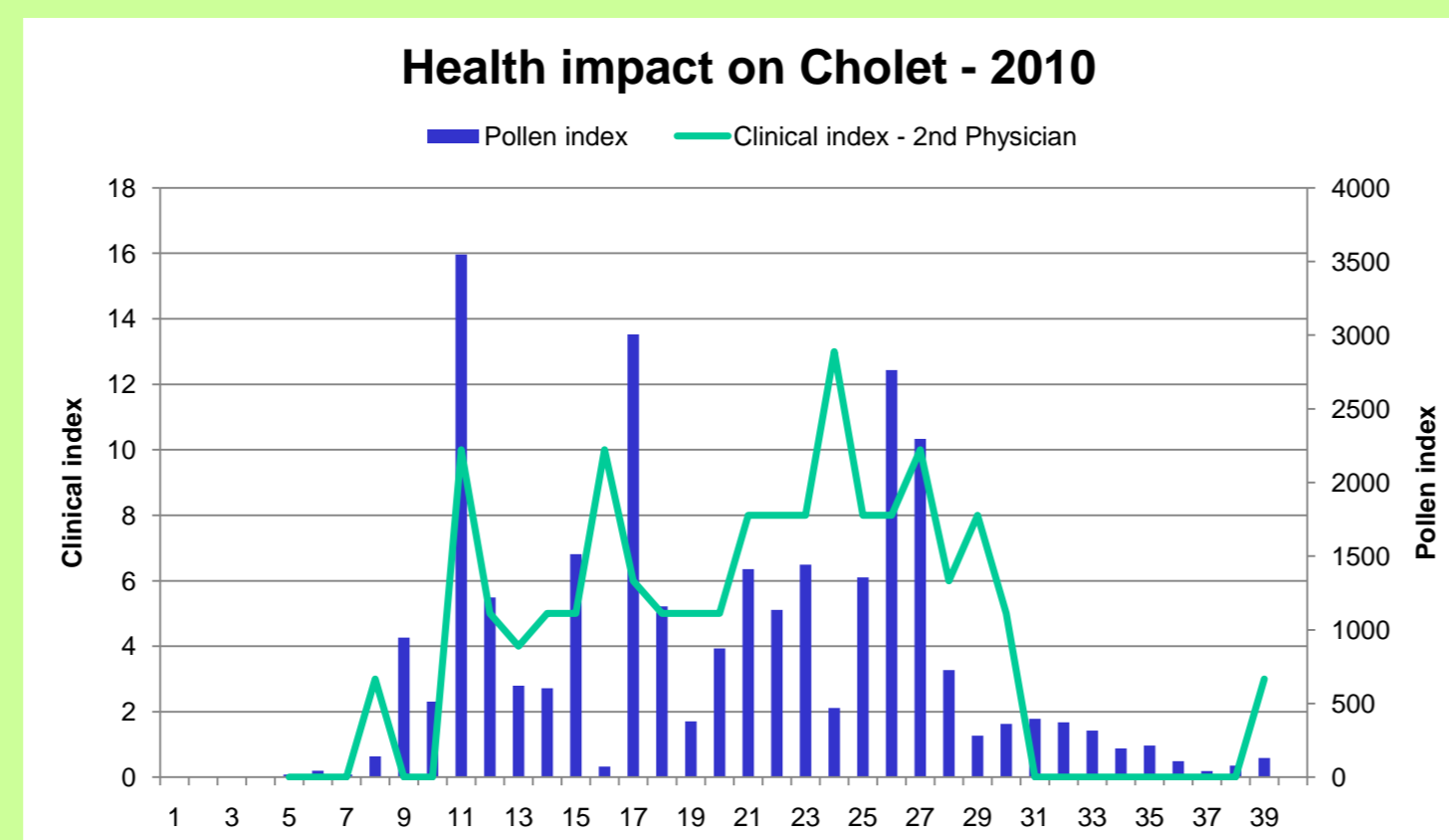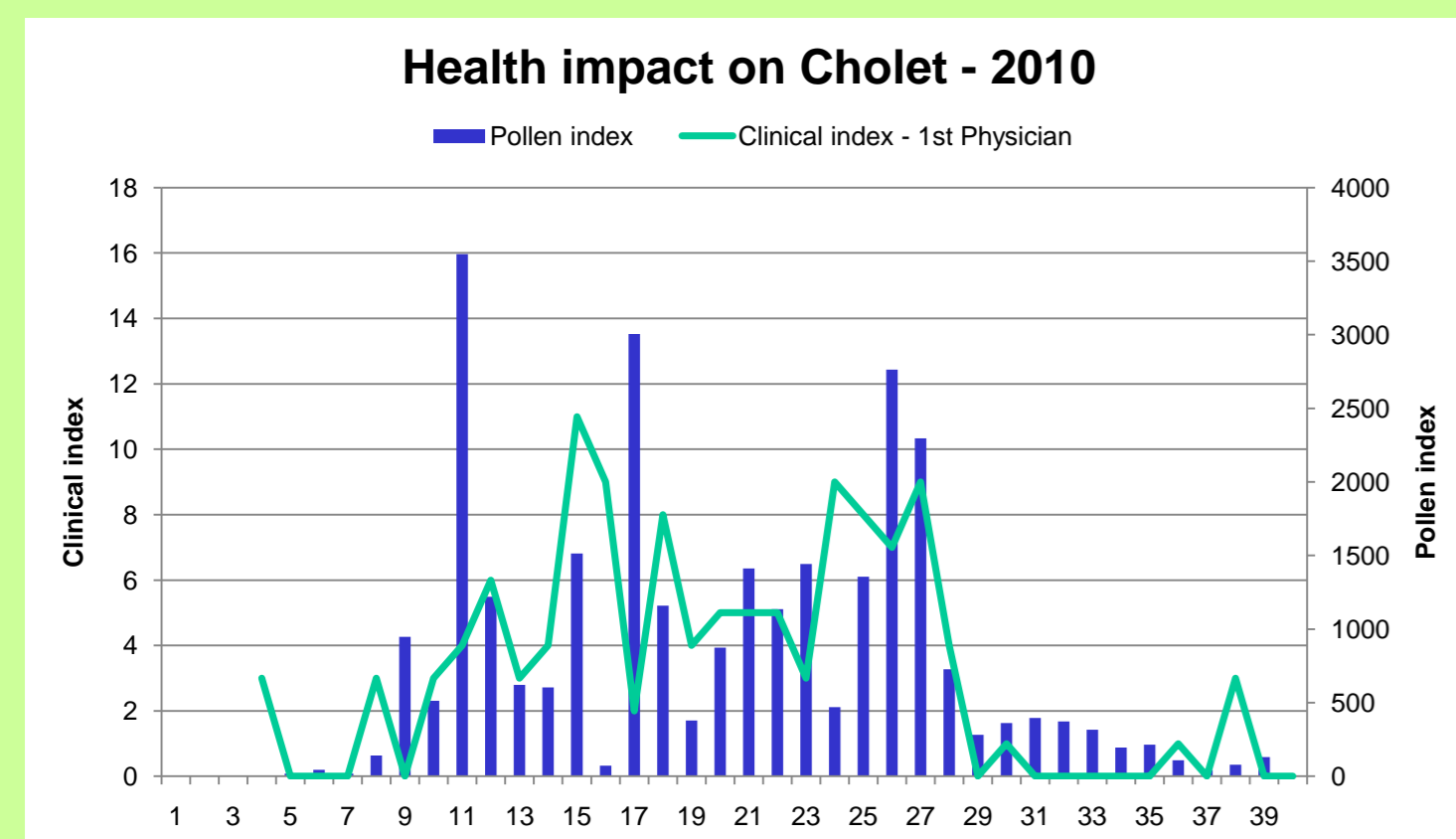Example of clinical index calculation :

Symptom Gravity	0 Null	1 Weak	2 Mean	3 Strong
x1 Conjonctivitis			●	
x2 Rhinitis				●
x1 Cough		●		
x1 Asthma			●	
x1 Cutaneous signs or other	●			

Conjonctivitis « Mean » $2 \times 1 = 2$
Rhinitis «Strong » $3 \times 2 = 6$
Cough « Weak » $1 \times 1 = 1$
Asthma « Mean » $2 \times 1 = 2$
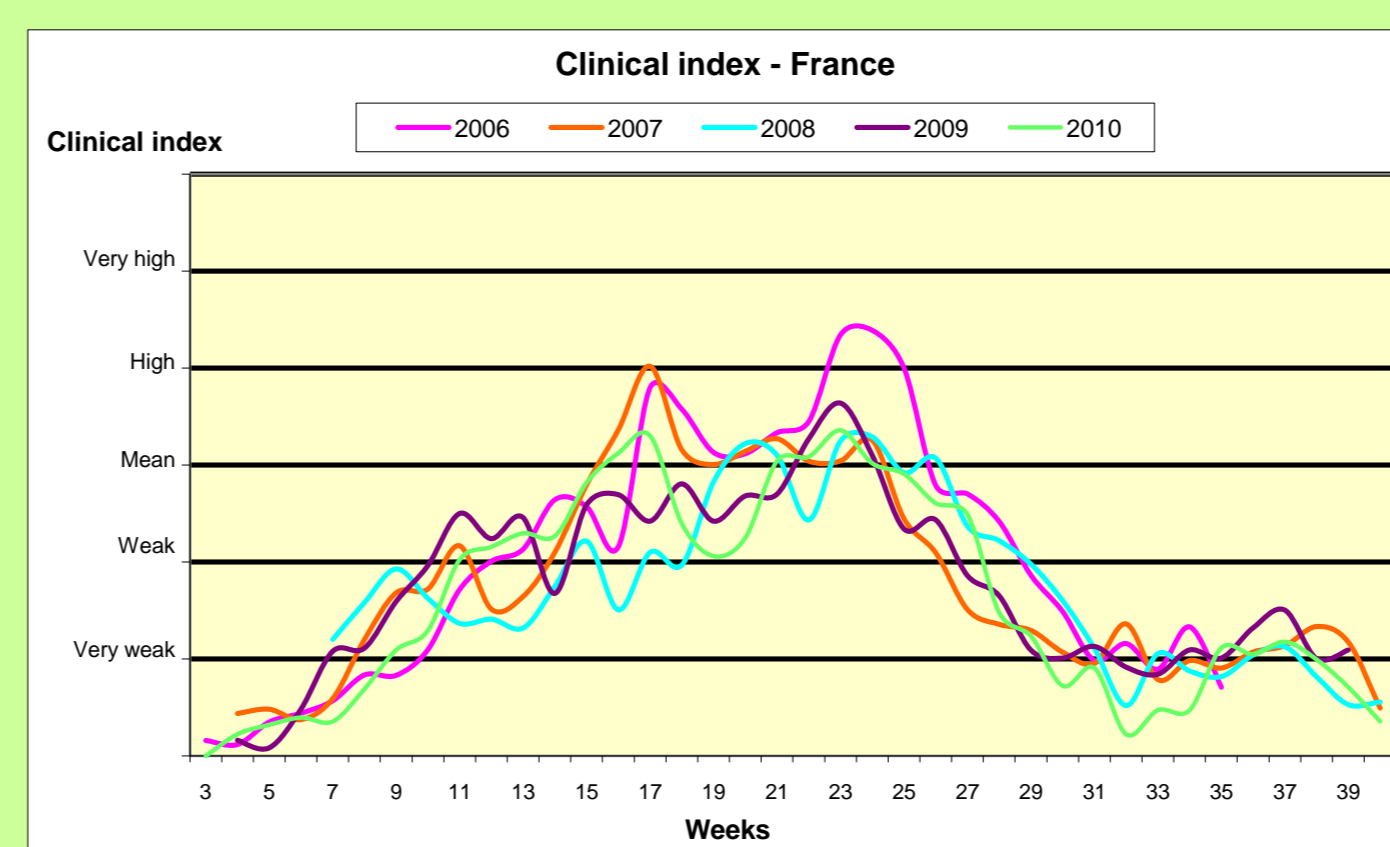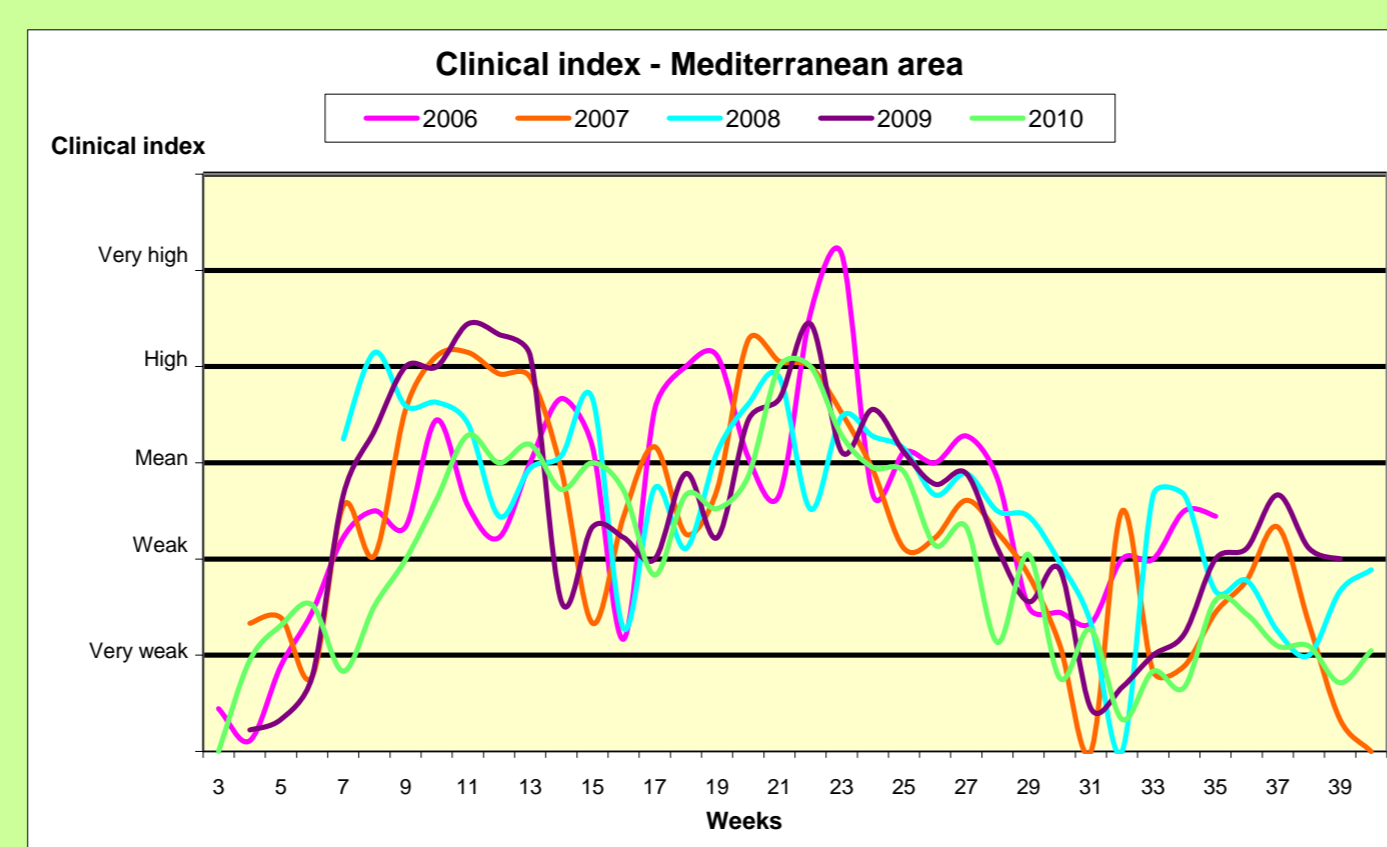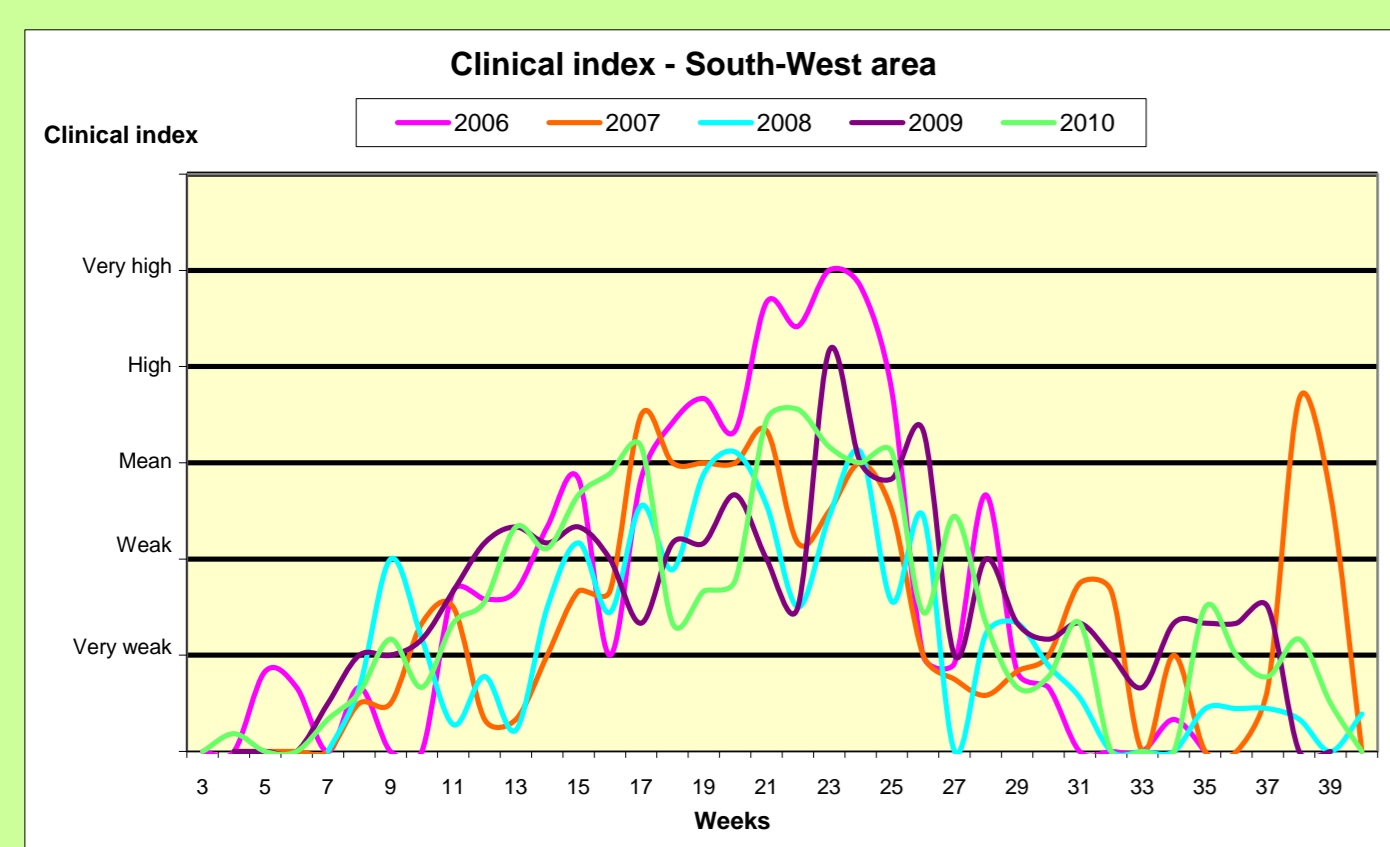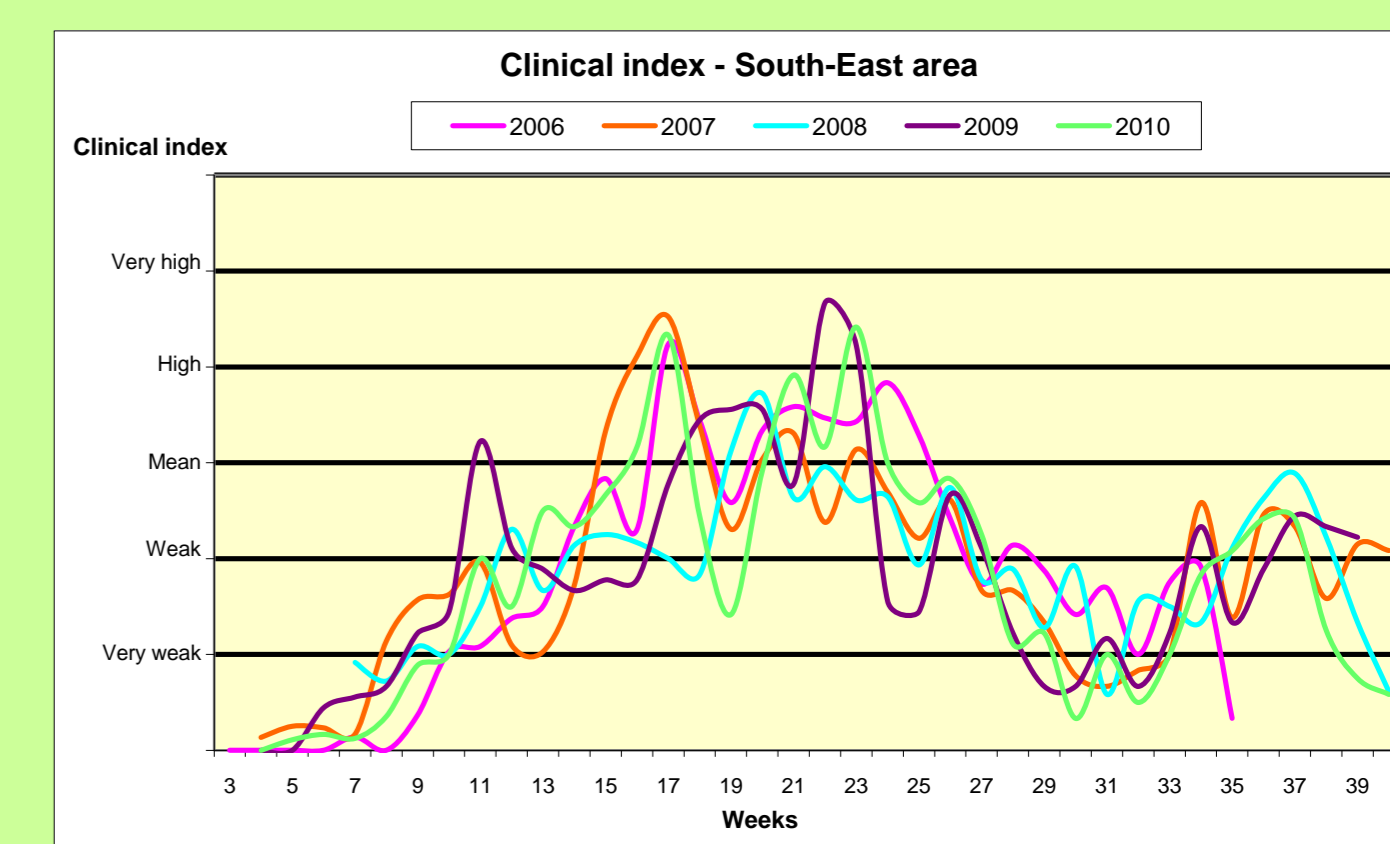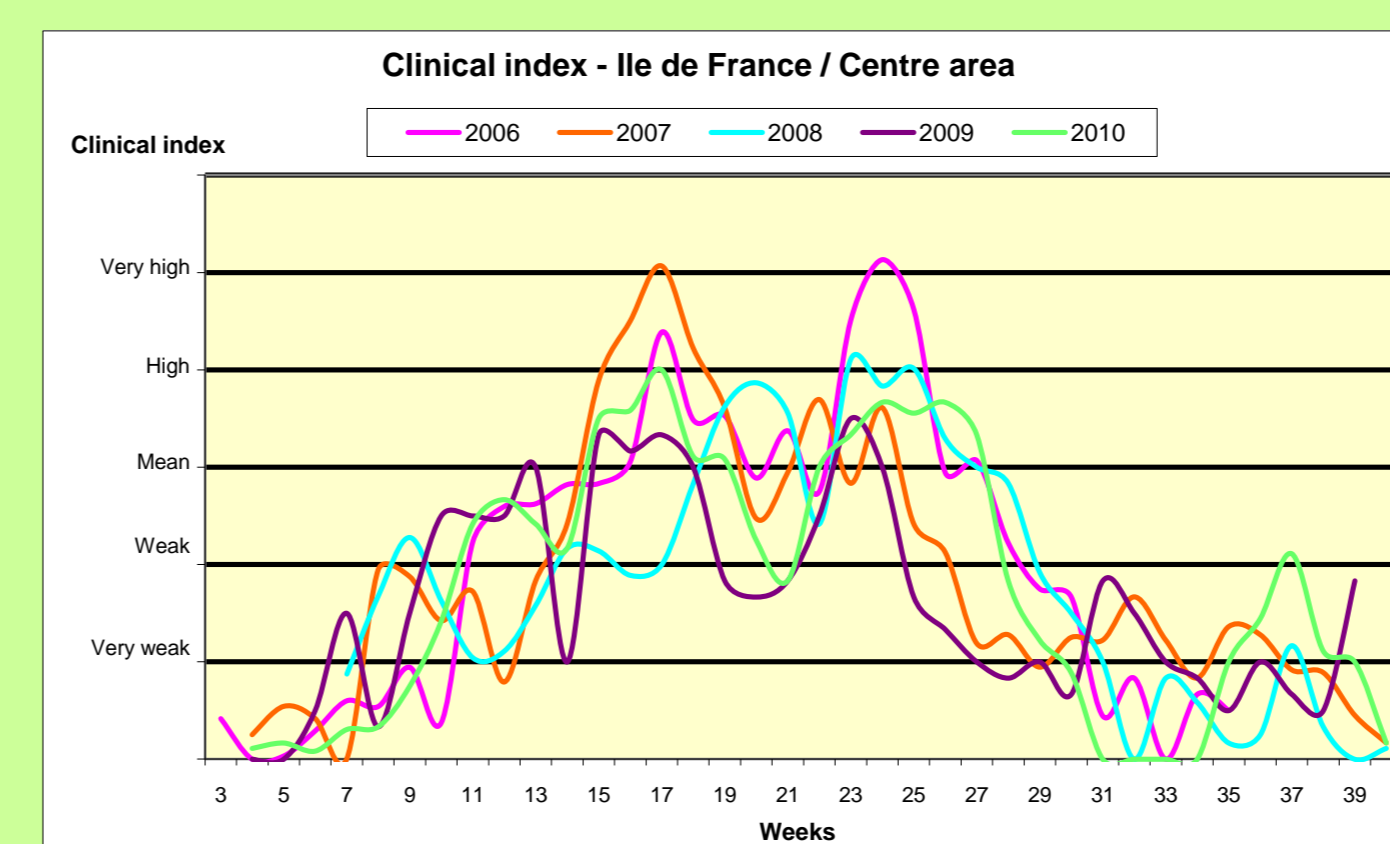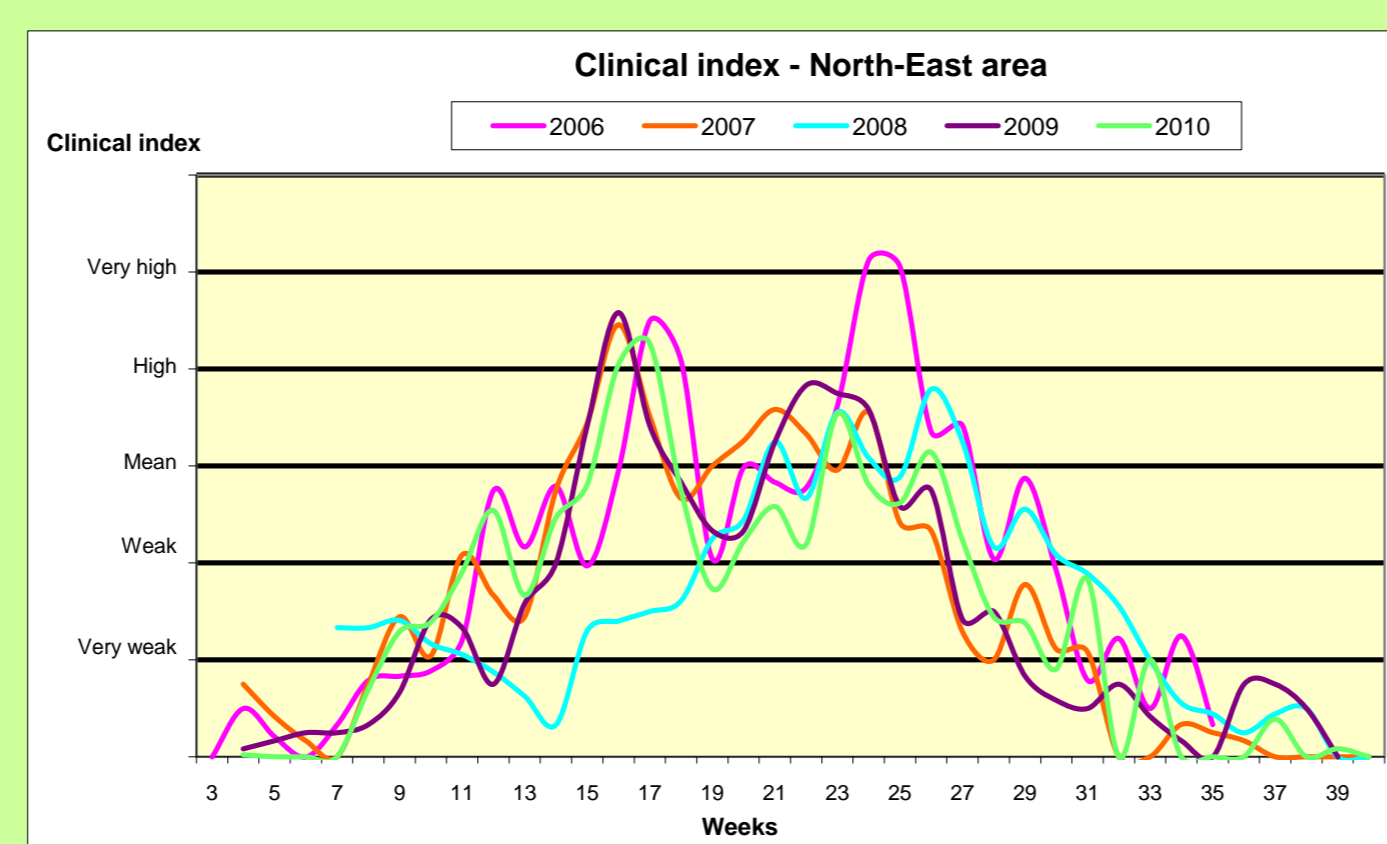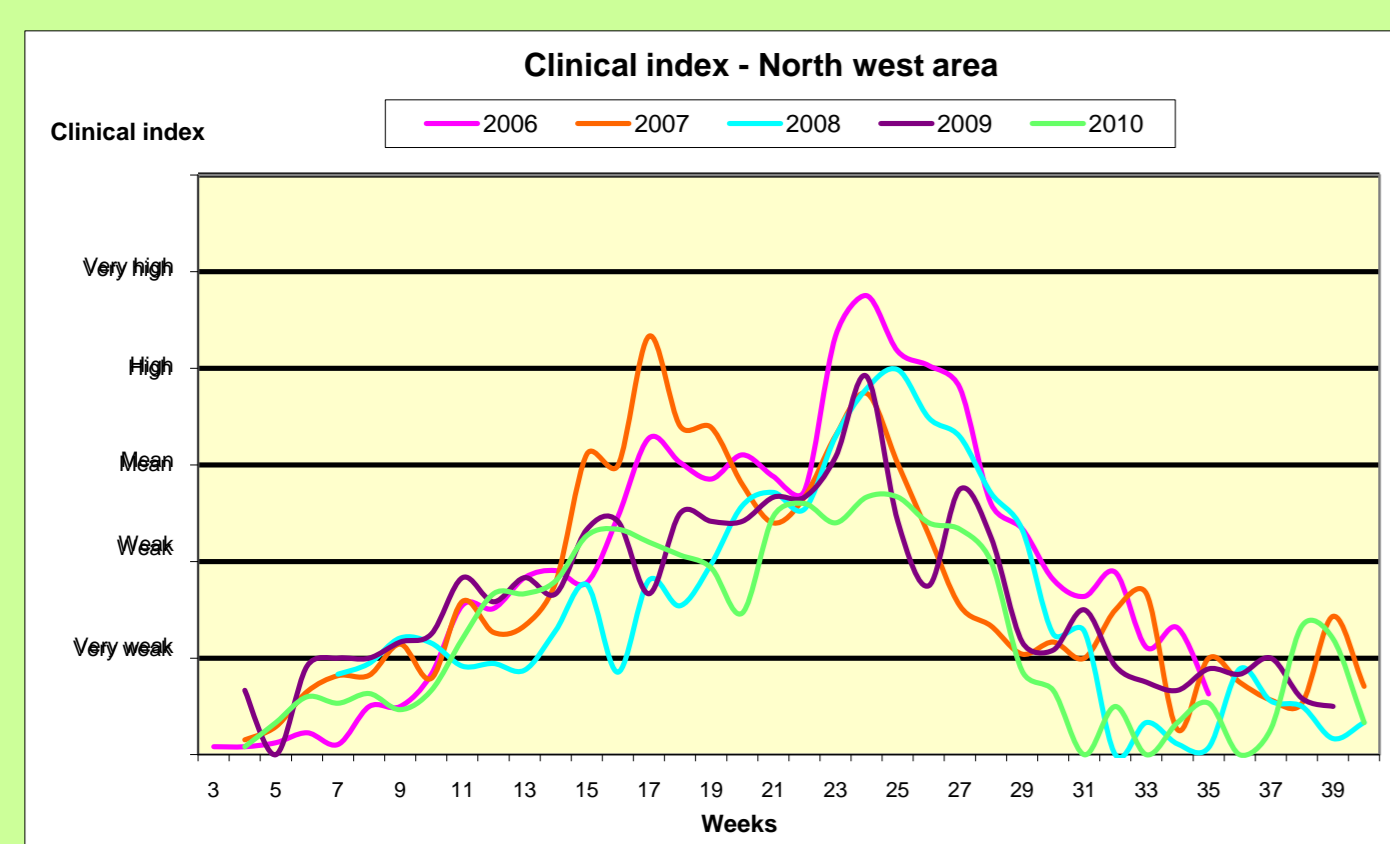Cutaneous signs« Null » $0 \times 1 = 0$

Clinical index ⟶ 11

Use of clinical index

Comparison of pollen index with clinical index of several physicians of a same town

Health impact on Cholet - 2010 (Pollen index — Clinical index - 1st Physician)
Health impact on Cholet - 2010 (Pollen index — Clinical index - 2nd Physician)
Health impact on Cholet - 2010 (Pollen index — Clinical index - 3rd Physician)
Health impact on Cholet - 2010 (Pollen index — Clinical index - Cholet)

Comparison of clinical index evolution between 2006 and 2010

Clinical index - North west area (2006 2007 2008 2009 2010)
Clinical index - North-East area (2006 2007 2008 2009 2010)
Clinical index - Ile de France / Centre area (2006 2007 2008 2009 2010)
Clinical index - South-East area (2006 2007 2008 2009 2010)
Clinical index - South-West area (2006 2007 2008 2009 2010)
Clinical index - Mediterranean area (2006 2007 2008 2009 2010)
Clinical index - France (2006 2007 2008 2009 2010)

Conclusion

Results show the intensity, year by year, of symptoms thanks to the evolution of clinical index curves. The analysis of clinical index of each area allows to identify health impact in these areas.

The follow-up of clinical index allow the study of the evolution of health impact while season, but also in the long term. It is a tool allowing to follow year after year the problem of pollinosis for allergic people.

Bibliography

Thibaudon M., Oliver G., Cheynel A., L'index clinique : outil d'évaluation de l'impact sanitaire du pollen, Environnement, Risques & Santé. Volume 7, Numéro 6, 411-6, novembre-décembre 2008