

# Risques sanitaires en Asie



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Infectious and  
Tropical Dis.  
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## Potential links of Interests

- In the past 3 years, I (or my department) have received honoraria from pharmaceutical companies (Takeda, Valneva) for participation in vaccine advisory boards (dengue, chikungunya)

# Epidémiologie

- Cas cliniques
- Séries de patients
- Etudes transversales
- Etudes de cohortes
- Maladies notifiées
- Réseaux sentinelles
- Etudes cas – témoins
- Etudes randomisées



Leder K et al. methodological approaches for estimating risks in travel medicine. J Travel Med 2008; 15:262–272

## Consequences of travel associated health problems (Steffen R et al. J Infect Dis 1987; 156: 84-91)

Illness	15/100/month
Medical consultation	8/100/month
Unable to work	3/100/month
Hospitalisation	0.5/100/month
Aero medical evacuation	1/1.000/month
Death (humanitarian)	1/10.000/month
Death (usual traveller)	1/100.000/month

**Cohort study**

## Injury deaths of American citizens

- Road traffic accidents pose a higher risk of death to travellers than violent crime everywhere with the exception of Philippines (21/1.000.000)
- High motorcycle related death rates in Thailand (56 % road death) and Vietnam
- Thailand ranks high in rates of both road traffic accidents (1<sup>st</sup> : 16/1.000.000) and intentionally caused death (4<sup>th</sup> : 0.5/1.000.000).

Notified  
death

Sherry MK et al. Inj Prev 2013;0:1-5

## CDC experience 2010-2013: 3 EJ cases in US travellers - vs 19 cases (1973-2010)

Time	08/10	06/11	08/12	Case series
Case	M, 33	M, 61	M, 42	
Country	China	Taiwan	South Korea	
Purpose	Vacation	Work	Resident	
Duration	10 days	4 months	3 years	
Exposure	3 x2 days out Shanghai	No	65 km South Seoul	
Issue	OK	OK	Died	

Hills J et CDC - J Travel Med 2014;21:1195-1198

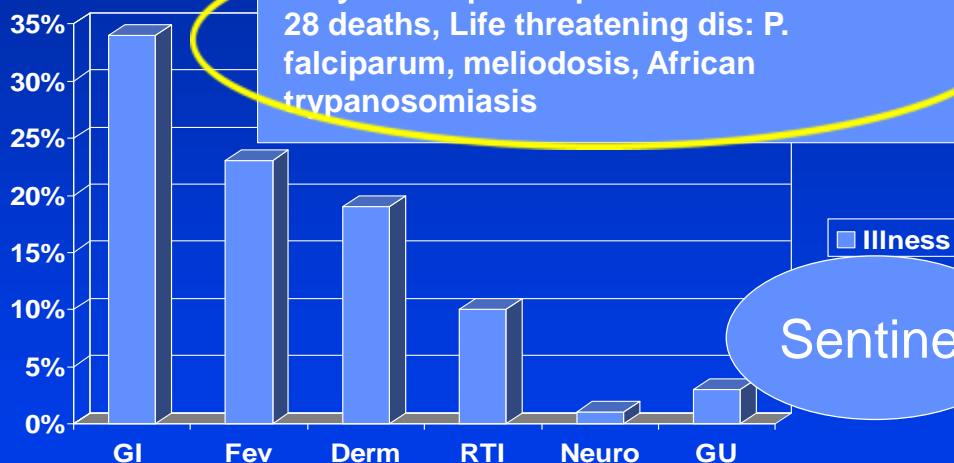
## Incidence rate of health problems/month travel in Developing Countries

- Diarrhoeae : 20-60%
- **Malaria** (West Africa, no prophylaxis : 3,5 %)
  - Dengue & **Influenza** : 1 %
- Animal bite and **tuberculosis** infection : 0,5%
  - **Malaria** (Tropical Africa) : 0,2 %
  - **Hepatitis A** : 3/10 000
  - **Typhoid** (SE Asia, Africa) : 2/10 000
- **Tick born encephalitis** (rural Austria) : 1/10 000
  - **Hepatitis B** : 5/100 000
  - **HIV Infection** : 2/100 000
  - **Japanese encephalitis** : 1/1.000.000
  - **Meningococcal infection** : < 1/1.000.000

Review

Steffen R. J  
Trav Med 2008;  
16: 79-81

## Illness in 42.173 travelers, GeoSentinel 2007-2011



Leder K et al. Ann Intern Med 2013; 158: 456-468

## Health problems in travellers

Cohort study

Author	Year	Origin	Travellers	Sick	Consulted
Steffen	1987	Swiss	7767	15%	8%
Ahlm	1994	Sweden	442	49%	11%
Hill	2000	USA	784	64%	8%
Winer	2002	Israel	200	70%	32% / 19%
Rack	2005	Germany	658	42%	

## Health problems in 784 American Travelers (3) – Risk factors

Cohort study

- Young age (43 y vs 46 y;  $p = 0.023$ )
- Female Sex (68 % vs 58 %;  $p = 0.008$ )
- Duration of travel (26 d vs 12 d;  $p = 0.001$ )
  - ➔ every day of travel increase by 3,1-3,7 % the incidence
  - ➔ 60% prevalence if duration < 30 days vs 80 % if duration > 30 days
- Destination : India (79 % ;  $p < 0,001$ )

(Hill DR ; J Travel Med 2000;7:259-268)

## Questionnaire based observational study in German travelers (univariate analysis)

Travellers with illness were....

- Younger ( $< 0,05$ )
- Traveling longer ( $< 0,01$ )
- Under basic conditions ( $< 0,01$ )
- In poor hygiene countries (OR = 1.6;1.3-2.2)
- No influence of sex, travel experience

Cohort study

(Rack J et al J Travel Med 2005;12:248-253)



## Health problems in 2385 Travelers. Laos

Sept 2011- April 2012

Questionnaire based survey (70% response rate)

3 Thai-Lao border checkpoints

1205 Thai and 1191 foreigners who had just finished travel

Cross  
sectional

	1205 Thai	1191 Foreigners
Median age	43 years	32 years
Tourism	82%	89%
Backpackers	3%	47 %
Duration	4 days	16 days

P < 0.001 for all items +

. at risk activity  
. pretravel  
vaccination,  
. consulation,  
. malaria  
prevention

Piyaphanee W.  
J.Travel Med  
2014;21:163-8

## 367/ 2385 (15%) had health Pbs\*

	1205 Thai	1191 Foreigners
Duration	3.8 days	16.3 days
<b>Any pb</b>	<b>6 %</b>	<b>24 %</b>
Diarrhea	1.5 %	13 %
Cough	2.8 %	8.2 %
Fever	0.5 %	4.79 %
Skin	0.6 %	3 %
Visit MD	0.2 %	2.1 %
Hospitalisation	0	0.5 %

Cross  
sectional

\* p<0,001 (all items)

Piyaphanee W. J.Travel Med 2014;21:163-8





## Health pbs in French Travelers in Nepal: 1984 vs 2001 (Hochedez P et al. J Travel Med 2007)

Cross  
sectional

Problems	2001 (276 pts)	1984 (860 pts)	
Diarrhea	27%	29%	0.4
Altitude	16%	0	< 0.001
LRespTI	11%	5%	0.001
Dermatoses	9%	14%	0.04
Fever	9%	8%	0.8
Trauma	6%	3%	0.01
URespTI	6%	12%	0.006
Psychiatric	6%	1%	<0.001
STD	0	4%	0.001



## Top 10 causes of consultations in 29281 patients, Ciwec clinic, Kathmandu (Nepal)

Acute diarrhea	23%	Sprain/strain	2.3%
Upper RTI	6%	HACO	2.1%
Acute bronchitis	4%	Acute GE	2%
SSTI	3.4%	Arthralgia	2%
HAPO	3%	Pharyngitis	1.8%

Pandey P. Travel Med & Inf Dis 2021; 40 : 101999

Cross  
sectional



## On site studies: beach resorts

	Fidji*	Maldives**
Otitis externa	10%	24%
Injuries (coral, shellfish...)	10%	14%
Sun related	10%	13%
Cutaneous Infections	13%	
Diarrhea	20%	

**Cross sectional**

\* Raju et al; Proceedings 2nd Conf Int Soc Trav Med 1992:62  
\*\* Plentz et al; Proc 2nd Conf Int Soc Trav Med 1992:17



**Top 10 causes of App connections in 75 Swiss travelers (27 yo; 62% F; duration: 14 d) in Thailand (TOURIST 1).**

Lethargy	80%	Stomach pain	42%
Itch/mosquitoes	72%	Runny nose	42%
Headache	58%	Nausea	40%
Sunburn	56%	Wound/cut	40%
Diarrhea	52%	Tense/irritable	34%

Farnham A. J Travel Med 2017; 24 : 1-8

Cohort study

**Health events experienced by 1000 (793) Swiss travelers (survey.days) (TOURIST 2).**

- **Mobile application (mHealth)**
- Health events experienced by 1000 (793) Swiss travelers (survey.days)
- 09/2017 – 04/2019
- < 4 weeks travel
- 34 yo. 54%F. Median travel duration: 16d
- India, Thailand, China, Brazil, Tanzania, Peru vs Switzerland (IRR)

Cohort study

Farnham A. Travel Med & ID 2022; 47 : 102294

**Top 10 Health events experienced by 135 Swiss travelers (19.340 survey.days) in Thailand (TOURIST 2).**

<b>Itch/mosquitoes</b>	<b>58%</b>	Nausea	42%
Sunburn	53%	Tired	39%
Headache	53%	Ear Throat pain	37%
Stomach pain	49%	Excited	30%
Diarrhea	47%	Cough	30%

Farnham A. Travel Med & ID 2022; 47 : 102294

Cohort study

**Top 10 Health events experienced by 140 Swiss travelers (1917 survey.days) in India (TOURIST 2)**

<b>Headache</b>	<b>58%</b>	Itch/mosquitoes	41%
Diarrhea	49%	Excited	40%
Stomach pain	48%	Ear Throat pain	38%
Tired	44%	Cough	35%
Nose congestion	44%	Nausea	33%

Farnham A. Travel Med & ID 2022; 47 : 102294

Cohort study

## Top 10 Health events experienced by 35 Swiss travelers (397 survey.days) in China (TOURIST 2).

Headache	60%	Stomach pain	34%
Tired	48%	Excited	31%
Diarrhea	45%	Anxiety	31%
Nose congestion	42%	Dizzy	28%
Itch/mosquitoes	37%	Cough	25%

Farnham A. Travel Med & ID 2022; 47 : 102294

Cohort  
study

## Pbs santé en Asie

- Sous continent indien vs sud-est asiatique
- Montagne vs plage, rural vs urbain, été vs hiver
- Accidentologie, pollution
- Diarrhée, coup de soleil, moustique/prurit, infections respiratoires, et..... céphalées.
- Arboviroses, Infections communautaires
- Bactéries MDR, XDR
- Leptospirose, melioidose, encéphalites
- [Paludisme, bilharziose], LMC, anguillulose, ...

