

FESTIVAL
DELLE
SCIENZE
INFETTIVOLOGICHE



FERRARA
20 - 21 SETTEMBRE 2018
SALA IMBARCADERO
CASTELLO ESTENSE

FESTIVAL
DELLE
SCIENZE
INFETTIVOLOGICHE



FERRARA
20 - 21 SETTEMBRE 2018
SALA IMBARCADERO
CASTELLO ESTENSE

FESTIVAL
DELLE
SCIENZE
INFETTIVOLOGICHE



FERRARA
20 - 21 SETTEMBRE 2018
SALA IMBARCADERO
CASTELLO ESTENSE

Festival delle Scienze Infettivologiche
Ferrara
20-21 settembre 2018

I rischi nel viaggiatore intercontinentale e la prevenzione

Guido Calleri
S.S. Medicina dei Viaggi
Osp. Amedeo di Savoia – ASL Città di Torino



Argomenti

- ✿ *Quale è il rischio per i viaggiatori*
- ✿ *Quali sono i determinanti del rischio*
- ✿ *La prevenzione*
 - ✿ *Counselling*
 - ✿ *Vaccinazioni*
 - ✿ *Chemioprofilassi*





GEOSENTINEL

G
gi

neurolo
e; 7

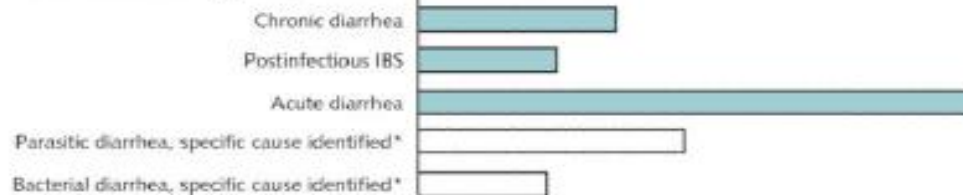
respirato
4851

del
cl

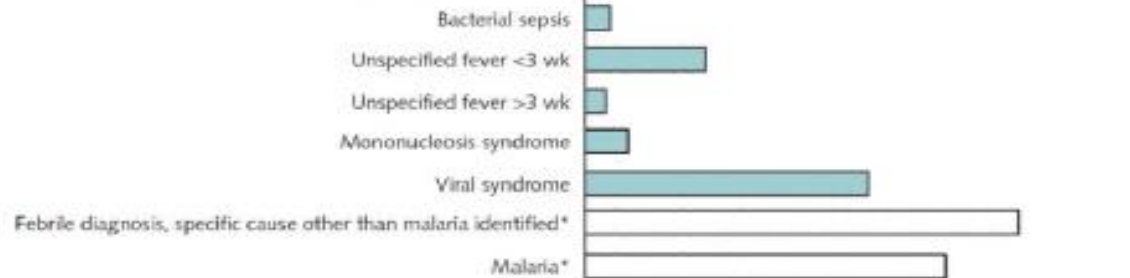
Variable

Total *

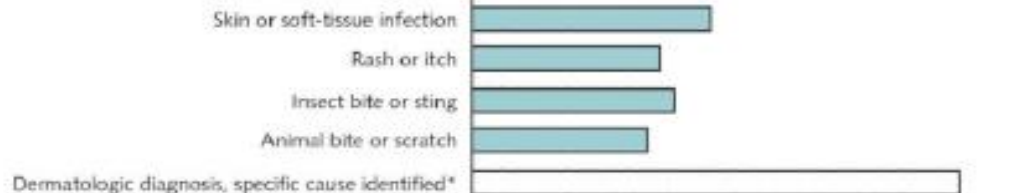
Gastrointestinal Diagnoses (n = 14 837)



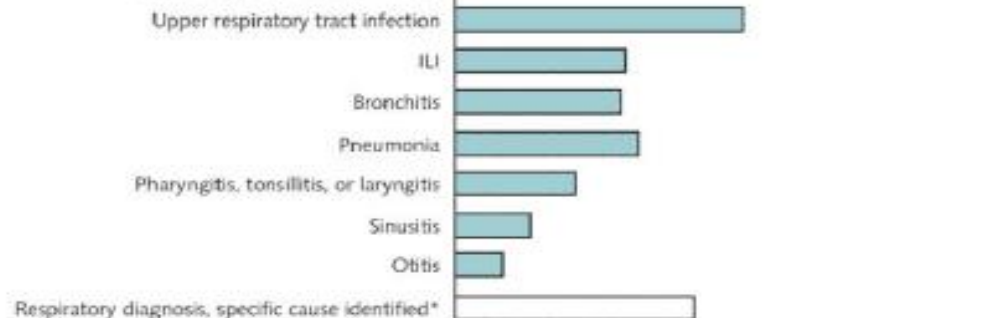
Febrile illness (n = 10 092)



Dermatologic Diagnoses (n = 9669)



Respiratory Diagnoses (n = 4851)



Proportion

Reported Pretravel Visit, %

40.5

i-201303190-00005.

avelers, 2007–

e Medicine, Monash
@monash.edu..
org).

delmondo.it

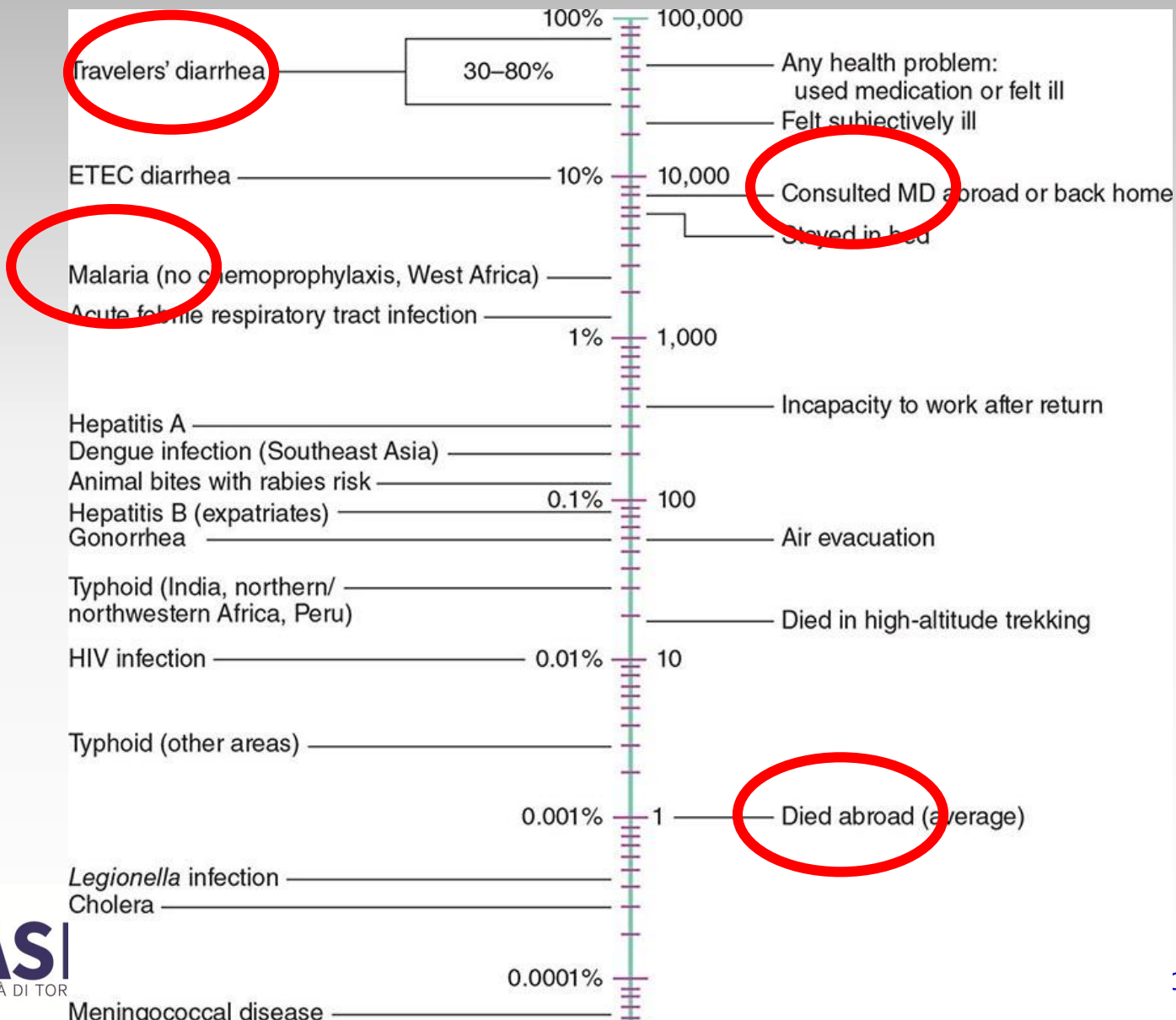


Diagnosi specifiche principali

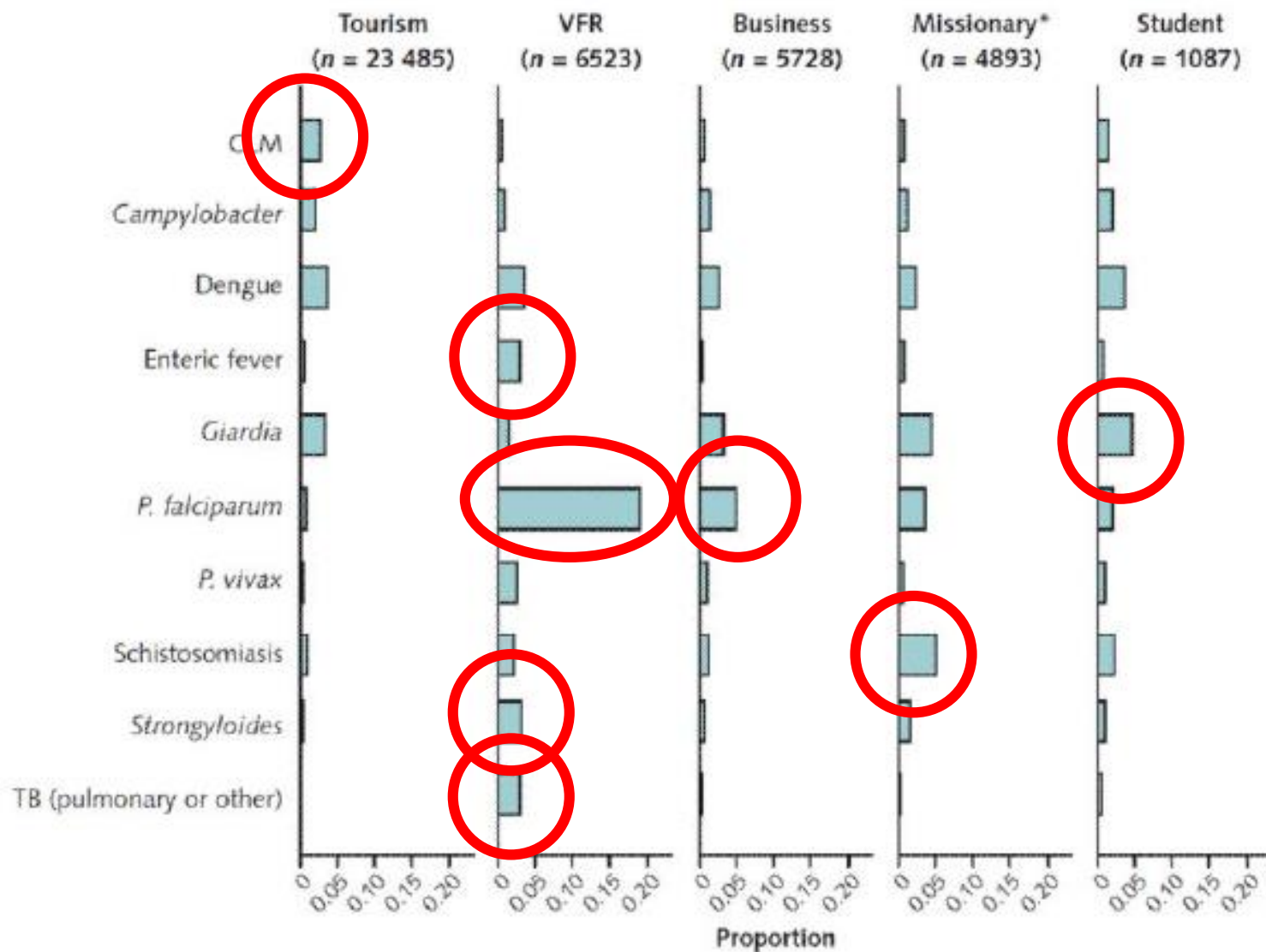
Malaria	2820
Dengue	1473
Giardia	1426
Rabbia PPE	1249
Larva migrans cutanea	806
Schistosomiasi	792
Campylobacter	753
Strongyloides	483
Febbre enterica	467
Influenza	367



WHO – International Travel and Health



Diagnosi per ragione del viaggio





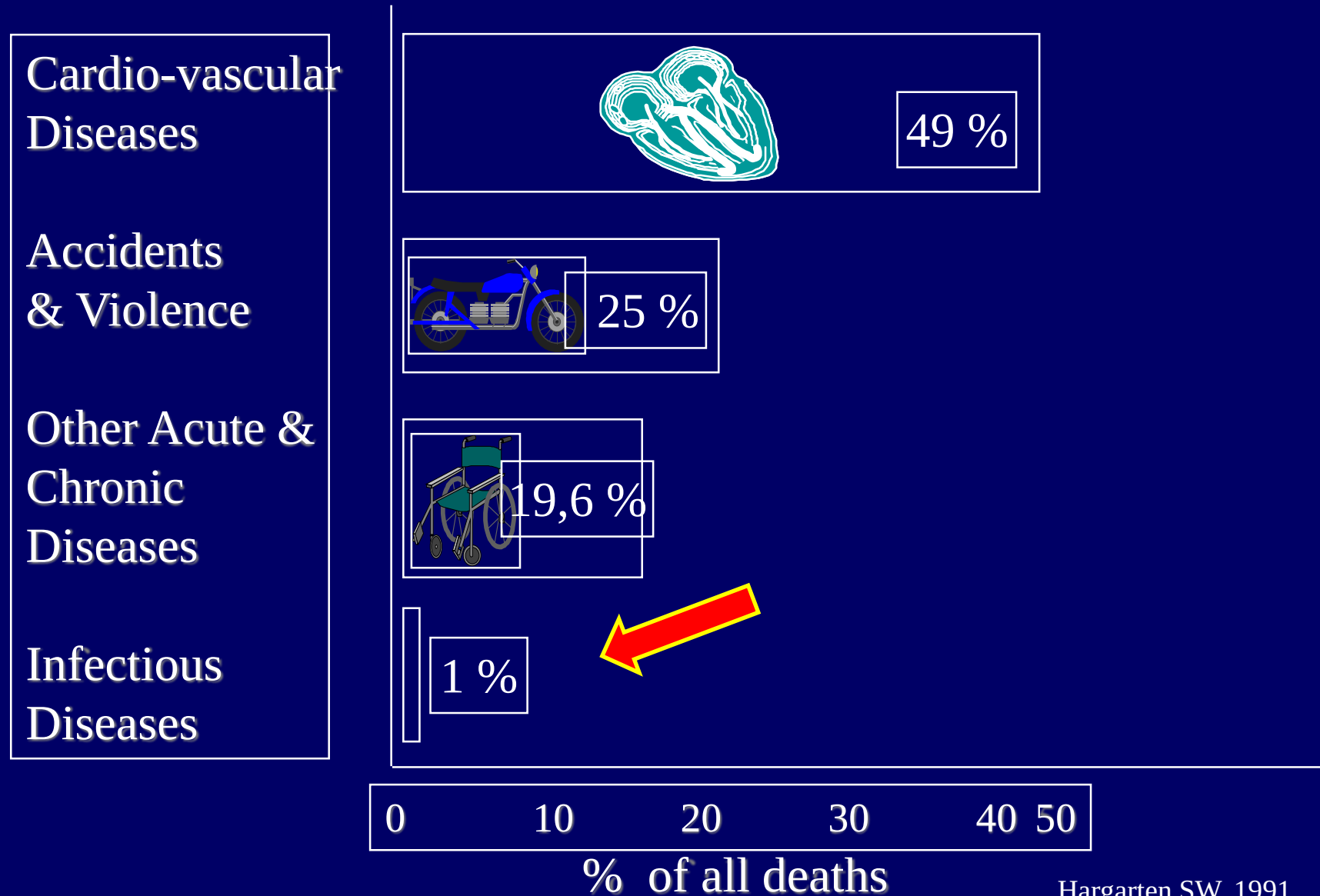
Demographic and Travel Characteristics of 28 Recorded Deaths Among Travelers

Age, y	Sex	Traveler Type	Diagnosis	Region (Country)
48	Male	Visiting friends/relatives	<i>Plasmodium falciparum</i>	Sub-Saharan Africa (Ghana)
66	Male	Business	<i>Plasmodium falciparum</i>	Sub-Saharan Africa (Burkina Faso)
57	Male	Missionary or volunteer	<i>Plasmodium falciparum</i>	Sub-Saharan Africa (Liberia)
49	Male	Tourism	<i>Plasmodium falciparum</i> , acute renal failure	Southeast Asia (Indonesia)
30	Female	Business	<i>Plasmodium falciparum</i>	Sub-Saharan Africa (Equatorial Guinea)
30	Male	Business	<i>Plasmodium falciparum</i>	Unknown
53	Female	Tourism	Dengue	Southeast Asia (Thailand)
24	Female	Business	Dengue, <i>Salmonella enterica</i> serotype Typhi	Southeast Asia (Indonesia)
42	Male	Tourism	Dengue, <i>Orientia tsutsugamushi</i> , AIDS, CMV	Southeast Asia (Thailand)
59	Female	Visiting friends/relatives	<i>Strongyloides</i> hyperinfection, HTLV-1 or HTLV-2, bacterial meningitis	Caribbean (Haiti)
57	Male	Business	Melioidosis	Southeast Asia (Thailand)
35	Male	Tourism	Melioidosis	Caribbean (Martinique)
34	Female	Tourism	Sepsis, <i>Clostridium difficile</i> diarrhea	Caribbean (Cuba)
55	Male	Tourism	Acute <i>Salmonella</i> diarrhea, sepsis	Caribbean (Puerto Rico)
26	Female	Student	Influenza A, myocarditis	Northeast Asia (Taiwan)
84	Female	Tourism	Lobar pneumonia, ARDS, sepsis	Western Europe (Spain)
82	Male	Business	Lobar pneumonia	South-Central Asia (India)
86	Male	Tourism	Lobar pneumonia, COPD, Parkinson disease	Western Europe (Spain)
53	Male	Business	Atypical pneumonia, AIDS	Southeast Asia (Vietnam)
40	Male	Tourism	AIDS, pleural effusion, cancer	Southeast Asia (country not ascertainable)
49	Female	Tourism	Lobar pneumonia, acute renal failure	Middle East (Saudi Arabia)
65	Male	Tourism	Legionnaire disease, acute renal failure	Eastern Europe (Prague)
83	Male	Tourism	Sepsis, atypical pneumonia	Northeast Asia (China)
35	Male	Tourism	Endocarditis	Northeast Asia (China)
78	Female	Tourism	Acute urinary tract infection, sepsis	Western Europe (Spain)
67	Male	Tourism	Pyelonephritis, sepsis	Western Europe (Spain)
5	Female	Tourism	Sepsis, hematologic cancer	South-Central Asia (India)
29	Female	Tourism	Encephalitis (unknown cause)	Southeast Asia (country not ascertainable)

28 decessi
0.06%



Decessi durante viaggi internazionali



Cause of repatriation

Mean of annual %

☐ Trauma	30%
☐ Cardio-vascular	30%
☐ Gastro-intestinal	8%
☐ Infectious	7%
☐ Respiratory	6%
☐ Psychiatric	4%
☐ Cancer	3%

Source: Europassistance



Cosa determina il rischio

Valutare --->> modificare

- Viaggio

Destinazione

itinerario

durata

motivi

alloggiamento

stagione



- Ospite

fisiologiche

patologiche

Immunizzazioni

- Comportamento

cibo

vettori delle
malattie

sessu



Fattori di rischio per la d.d.v.

✿ Area geografica

- ✿ Alto (>20%) → S e SE Asia, Africa, Am.latina
- ✿ Medio (8-20%) → Caraibi, C e E Asia, E Europa, M.O.
- ✿ Basso (<8%) → altri

✿ Viaggio

- ✿ Prima settimana
- ✿ Cibo di strada
- ✿ Viaggi «all inclusive»

✿ Ospite

- ✿ Inib.pompa protonica
- ✿ Alterazioni intestinali
- ✿ Fattori genetici
- ✿ Età 20-30
- ✿ Origine area alto rischio



Cosa determina il rischio

Valutare --->> modificare

- Destinazione

itinerario
durata
motivi
alloggio
stagione

- Caratteristiche

individuo
fisiologia
patologia
Immunizzazioni

- Comportamento

Cosa si può fare ?

➤ **Informazione**

➤ **Vaccinazioni**

➤ **Chemiprofilassi**

venom
malattie

sesto



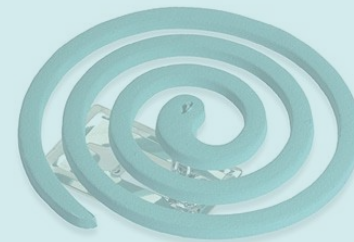
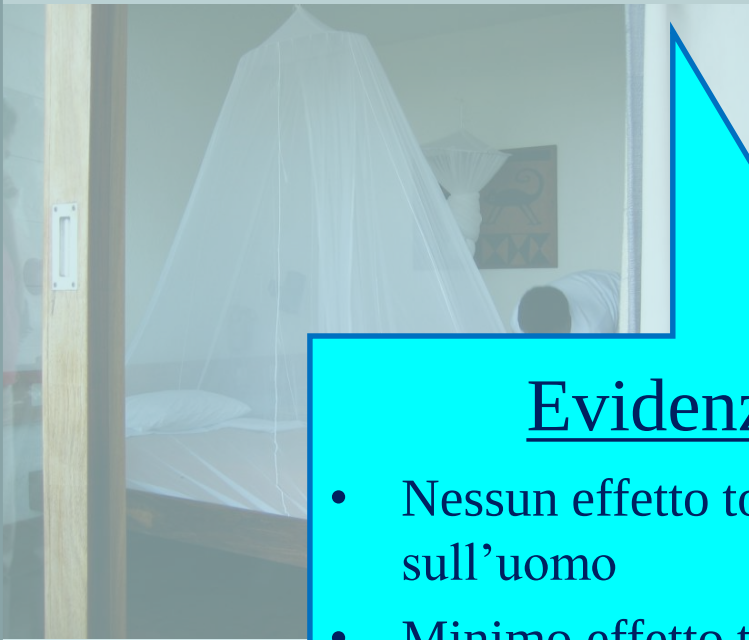
Mosquito bite protection

**Direttiva
2010/51/EU:
<15%DEET**

Evidenza

- Nessun effetto tossico sull'uomo
- Minimo effetto tossico sugli animali
- Rischio aumento MTV

i repellenti >10% di p.a. utilizzati con cautela in particolare sui bambini e le donne in gravidanza.



Insect bite prevention

Evidence base for repellents

product	bite avoidance	strength	quality
DEET	Avoid mosquitoes	A	I
	Avoid ticks	B	I
	Wristbands	E	I
icaridine	Avoid mosquitoes	A	I
	Avoid ticks	B	I
IR3535	Avoid mosquitoes	B	II
	Avoid sand flies	B	II
PMD	Avoid mosquitoes	A	I
Citronella		C	III
Neem		D	III
Essential oils		D	III



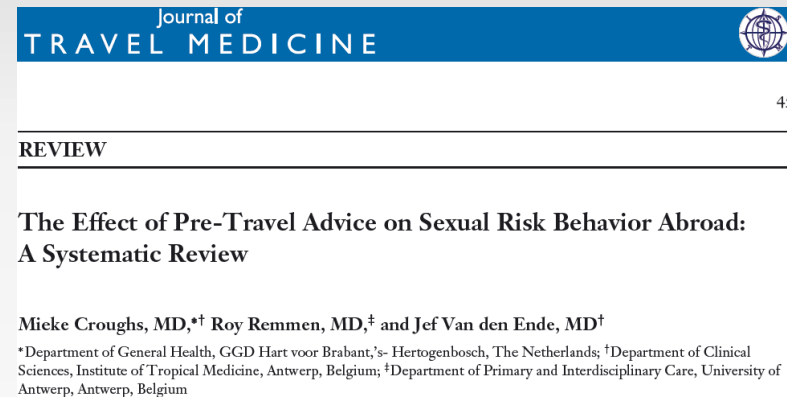
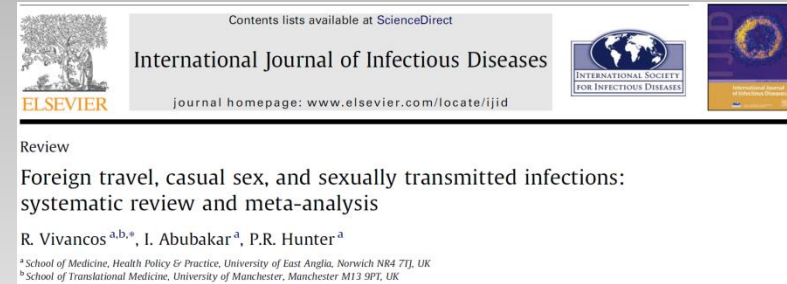
Evidence base for area and barrier methods

tool	use	strength	quality
Insecticides	On clothing	A	I
	Net impregnation	A	I
	On tents	B	II
Vaporizing insecticide mats	Avoid mosquitoes	B	II
	Malaria prevention	D	II
Mosquito coils	Avoid mosquitoes	B	II
	Malaria prevention	C	III
	Tumori polmonari	D	II
	Other adverse effects	D	III
Essential oil candles	Avoid mosquitoes	C	II
	Avoid other insects	C	II
Spray insecticides	Avoid mosquitoes and other insects	C	III
	Malaria prevention	D	II
	Prevention of insect transmitted infections	D	III
Oil based products	Avoid midges	C	I
	Avoid mosquitoes	C	II
Soybean oil	Avoid mosquitoes and black fly	D	III



Sesso e viaggi

- ❖ Sesso casuale durante un viaggio 20,1%
- ❖ Rapporti non protetti 49,4%
- ❖ Intervento motivazionale vs counselling standard
 - ❖ Nessun effetto su sesso casuale e uso condom
- ❖ Max rischio STI (0.9%):
 - ❖ maschi, VFRs, viaggi <1 mese, nessun counselling



Vaccinazione del viaggiatore

1) Vaccini routine
(+cat.rischio)?



2) Vaccini routinari
viaggio?



DPT
Influenza
MMR
Pneumo
Meningo

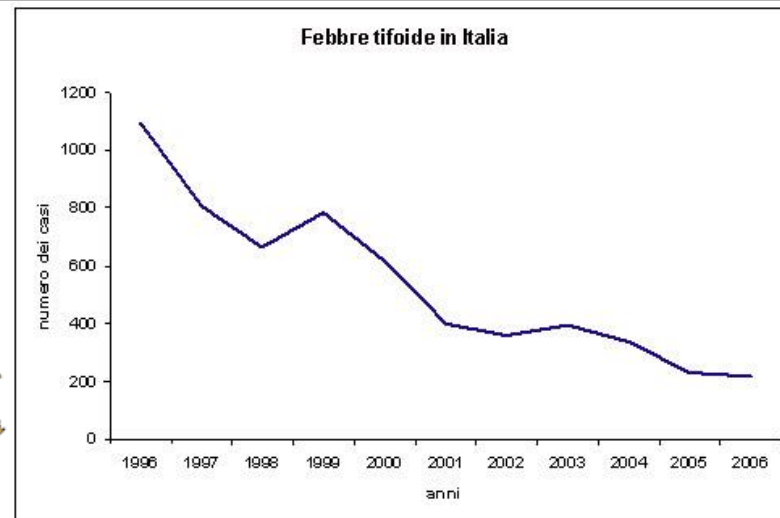
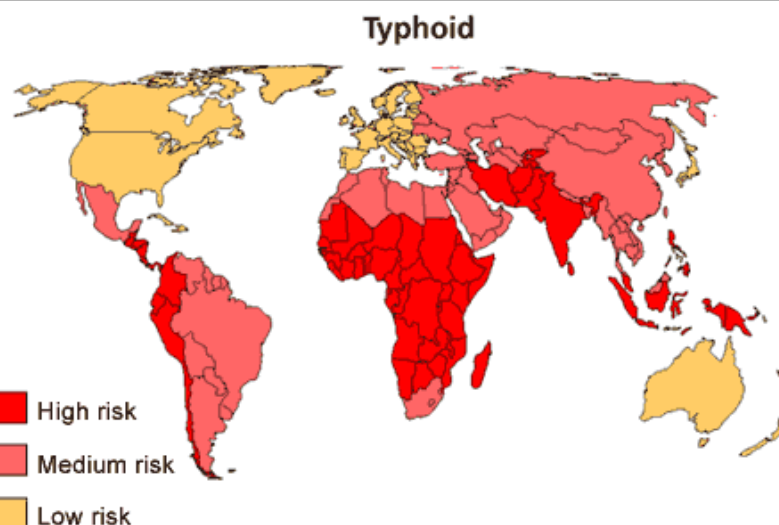
Epatite A
f.tifoide



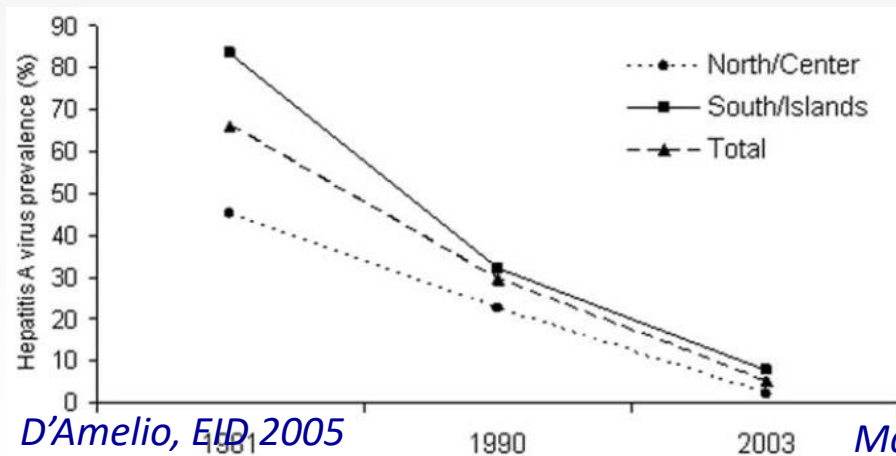
Rischio di infezioni enteriche

Regione	Viaggiatori (10 ⁶)	Casi	Tasso/10 ⁷	RRR	
Europa occ e Nord	1104.8	40	0.4	1.0	
Nord America	393.0	28	0.7	2.0	
Europa Centrale/Est	485.0	69	1.4	3.9	
Europa Sud	888.2	212	2.4	6.6	Basso
Asia Nord/Est	416.1	155	3.7	10.3	
Australasia	40.2	25	6.2	17.2	
Oceania	17.0	25	14.7	40.6	
Medio oriente	183.7	399	21.7	60.0	
Nord Africa	68.0	187	27.5	76.0	Moderato
America Centrale	151.6	475	31.3	86.5	
Caraibi	104.3	356	34.1	94.3	
Asia Sud/Est	256.8	967	37.7	104.0	
Sud America	90.2	663	73.5	203.0	Alto
Sub-Sahara Africa	118.5	1209	102.0	281.8	
Asia Sud	39.6	1276	322.2	890.0	Molto alto

Febbre tifoide



Epatite A



Characteristics	Subjects, N	Anti-HAV	
		N	%
Sex			
Males	141	140	99.3
Females	41	41	100.0
Age class			
00-24	31	31	100.0
25-29	36	36	100.0
30-34	53	52	98.1
35-39	50	50	100.0
≥40	12	12	100.0
Civil status			
Married	64	63	98.4
Single	118	118	100.0
Occupation			
Employed	95	95	100.0
Unemployed	87	86	98.9
Educational level			
Primary/secondary school	67	67	100.0
High school	115	114	99.1

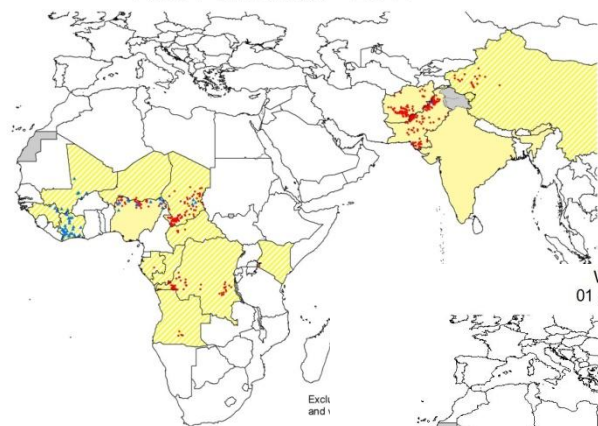
Majori, JTM 2008



Vaccinazione del viaggiatore

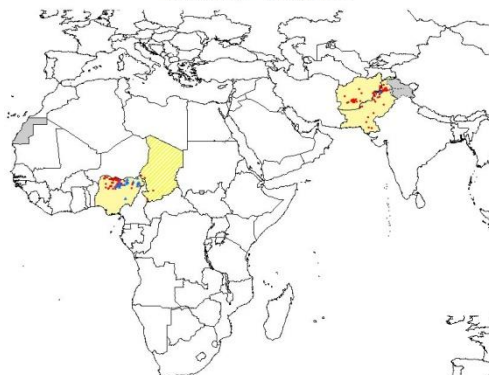


Wild Poliovirus - 2011

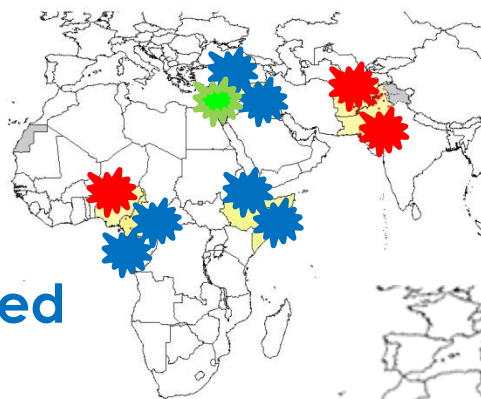


Poliomielite

Wild Poliovirus - 2012
01 January - 13 November

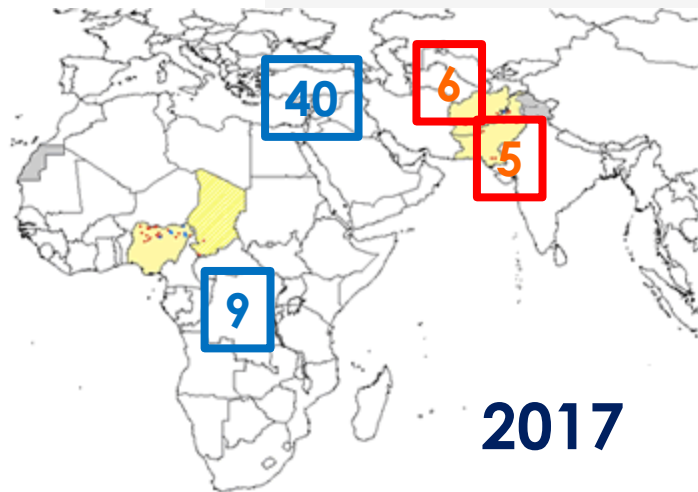


Wild Poliovirus - 2014
01 January - 11 November



Vaccine-derived
Wild

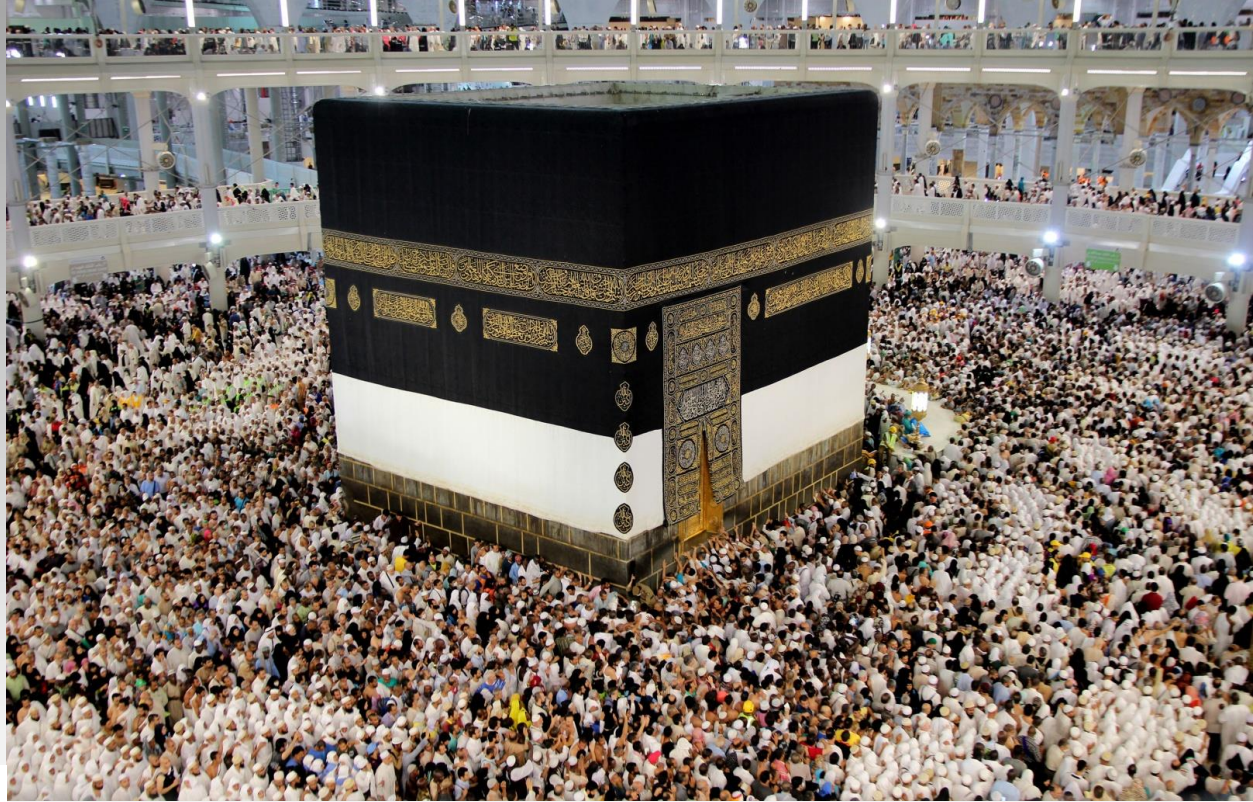
Data in HQ as of 11 November 2014



2017



Meningite menigococcica



Lancet mass gatherings medicine 1



Hajj: infectious disease surveillance and control

Ziad A Memish*, Alimuddin Zumla*, Rafat F Alhakeem, Abdullah Assiri, Abdulhakeem Turkestani, Khalid D Al Harby, Mohamed Alyemmi, Khalid Dhafar, Philippe Gautret, Maurizio Barbeschi, Brian McCloskey, David Heymann, Abdullah A Al Rabeeh, Jaffar A Al-Tawfiq

Religious festivals attract a large number of pilgrims from worldwide and are a potential risk for the transmission of Lancet 2014; 383: 2073-82

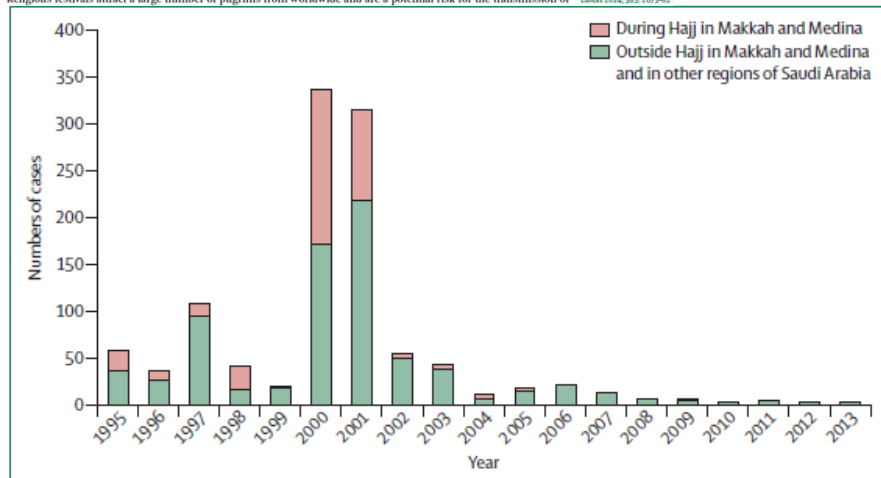


Figure 4: Number of cases of invasive meningococcal disease linked to Hajj from 1995 to 2013



Vaccinazione del viaggiatore



Rischio febbre gialla per i viaggiatori

(CDC Yellow Book)

✿ Rischio viaggiatori

✿ West Africa **50**/100,000

✿ South America **5**/100,000



1970-2015: **10** casi da Europa e USA, mortalità 80%

2016 Angola: **15** casi viaggiatori da Asia e Africa

Rischio legato al vaccino

(CDC Yellow Book)

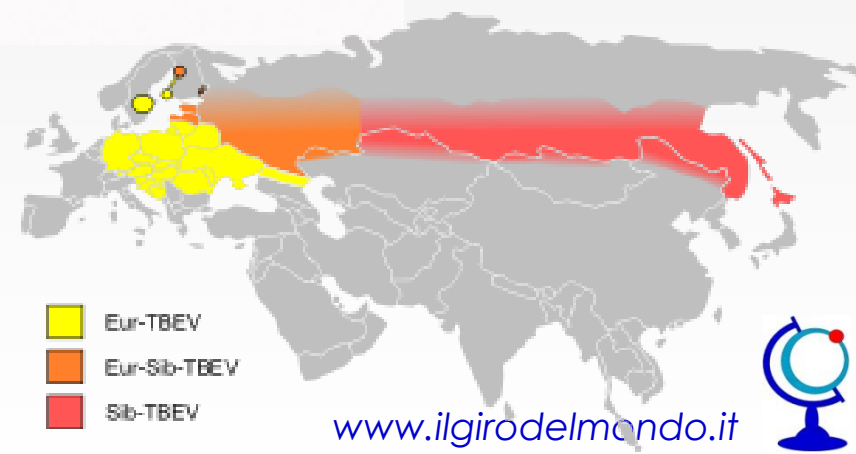
✿ Anafilassi **1,8**/100.000

✿ Acute neurologic disease **0,8**/100.000

✿ Acute viscerotropic disease **0,4**/100.000 *

* >40 casi in 10 anni, mortalità 53%





NOTICE.

PREVENTIVES OF

CHOLERA!

Published by order of the Sanitary Committee, under the sanction of the Medical Council.

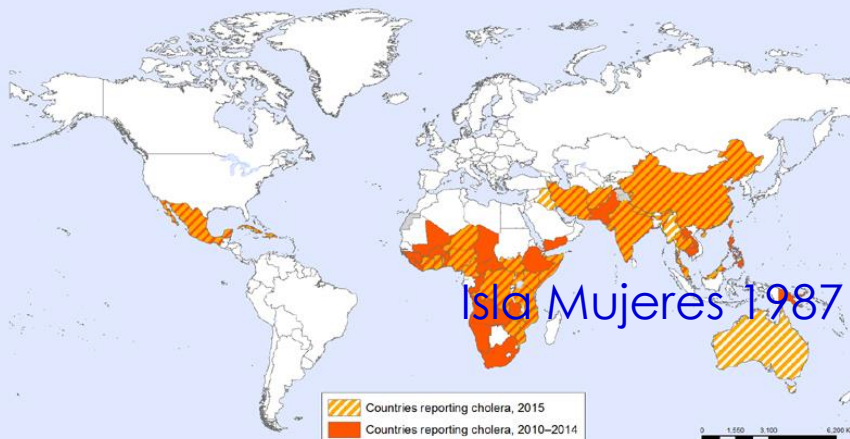
BE TEMPERATE IN EATING & DRINKING!

Avoid Raw Vegetables and Unripe Fruit!

Abstain from **COLD WATER**, when heated, and above all from *Ardent Spirits*, and if habit have rendered them indispensable, take much less than usual.

New York City Board of Health, 1832

Countries reporting cholera, 2010–2015



Isla Mujeres 1987

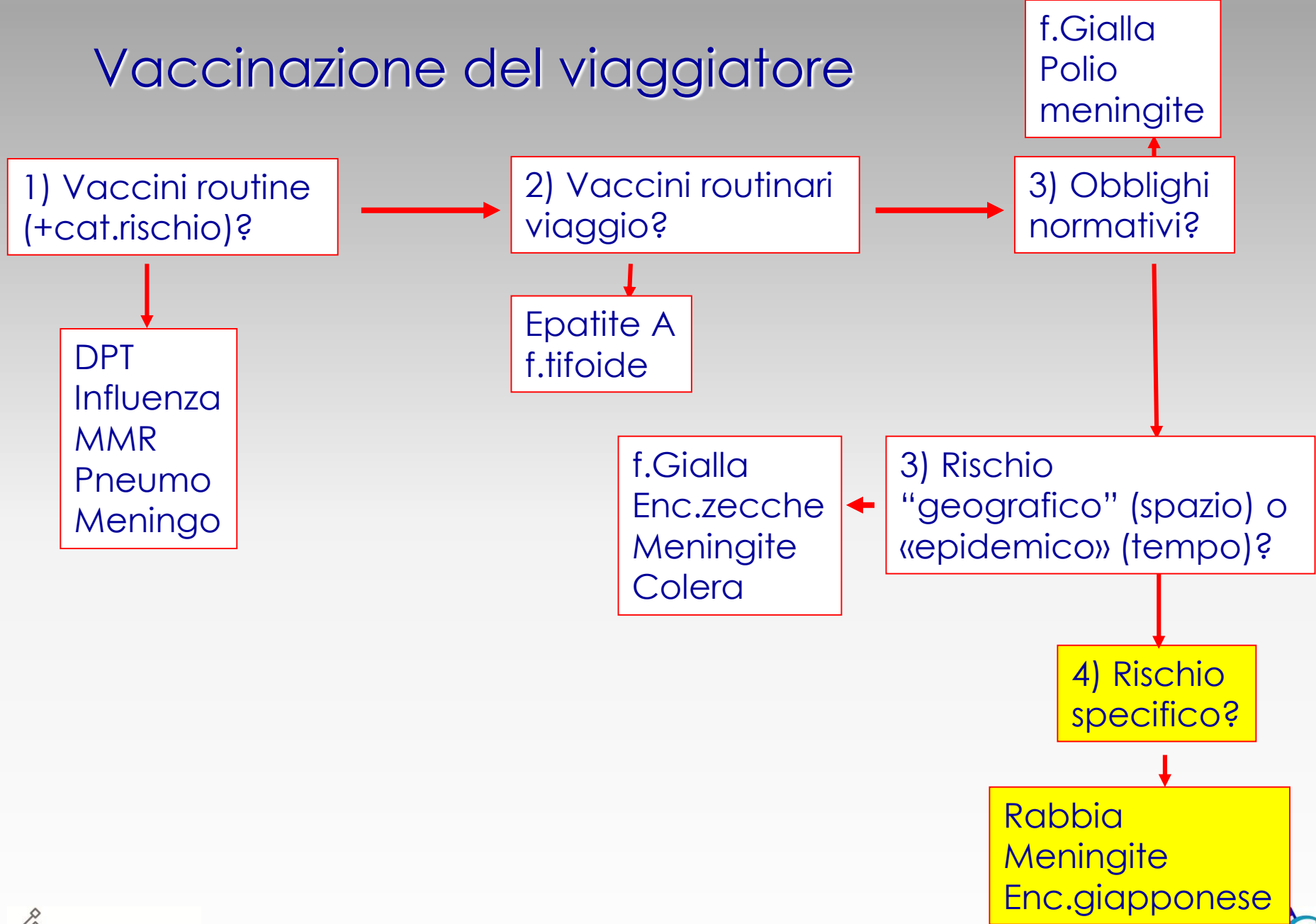
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Information Evidence
and Research (IER)
World Health Organization

© WHO 2015. All rights reserved.



Vaccinazione del viaggiatore



Pre-



giorno 0

7

21 o 28

giorno 0

3

Post-



giorno 0

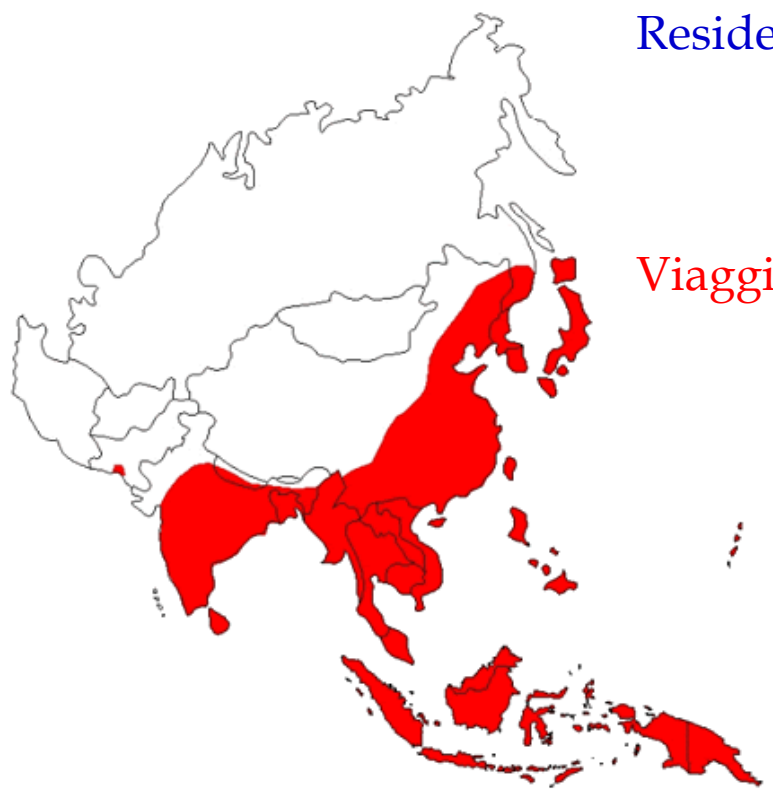
3

7

14

28





Residenti:

30'000-50'000 casi/anno
(1/3 decessi, 1/3 sequele permanenti)

Viaggiatori:

34 casi 1978-2007 (*Shlim 2006, Hatz 2009, Buhl, 2009*)

(rischio 1: 1'000'000

aree di risaie stag.piogge 1:5'000 to 1: 20'000)

(*Shlim2002, 2006*)



Vaccinazione del viaggiatore

1) Vaccini routine
(+cat.rischio)?

DPT
Influenza
MMR
Pneumo
Meningo

2) Vaccini routinari
viaggio?

Epatite A
f.tifoide

f.Gialla
Polio
meningite

3) Obblighi
normativi?

3) Rischio
"geografico" (spazio) o
«epidemico» (tempo)?

f.Gialla
Enc.zecche
Meningite
Colera

4) Rischio
specifico?

Rabbia
Meningite
Enc.giapponese

5) Rischio per soggiorno
prolungato?

Epatite B
Rabbia
Colera/ddv

**Pronti per
la
partenza**



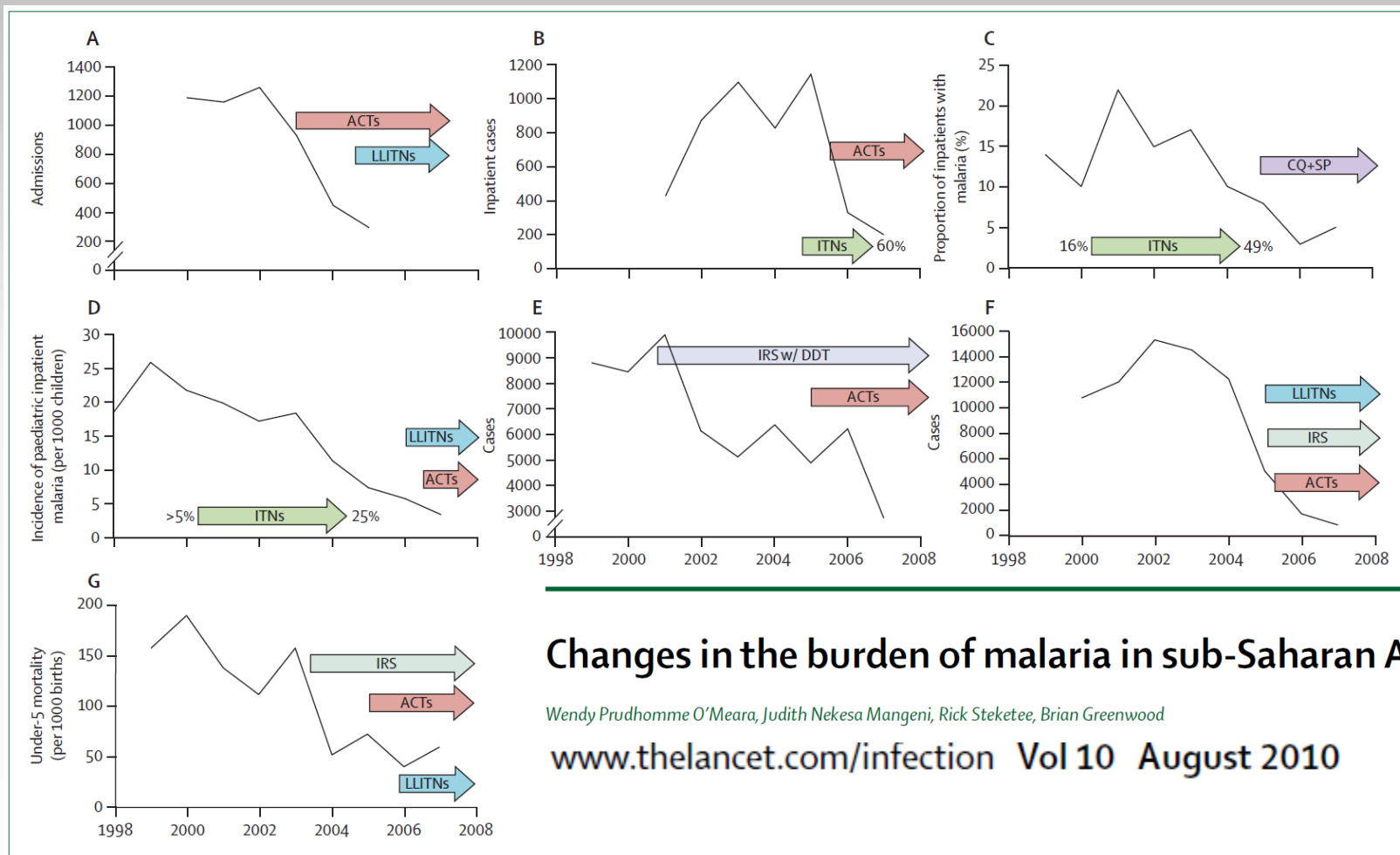
Malaria

Cosa succede nel mondo

- ✿ Roll Back Malaria
 - ✿ 99 paesi endemici nel 2000
 - ✿ Mortalità ridotta del 42% nel 2012
 - ✿ 59 paesi invertono la tendenza entro il 2015
- ✿ World Malaria Report 2017
 - ✿ 91 paesi endemici
 - ✿ Riduzione casi del 18% dal 2010
 - ✿ 2 paesi dichiarati malaria free
 - ✿ 21 paesi potrebbero eliminarla entro il 2020



Cosa succede nel mondo I programmi di controllo



Changes in the burden of malaria in sub-Saharan Africa

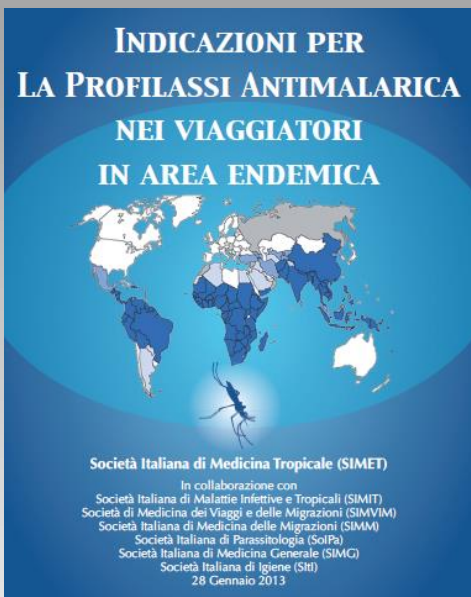
Wendy Prudhomme O'Meara, Judith Nekesa Mangeni, Rick Steketee, Brian Greenwood

www.thelancet.com/infection Vol 10 August 2010



Figure 3: Changes in malaria indicators over time relative to the introduction or scaling up of control measures in selected countries

(A) Number of malaria hospital admissions in Zanzibar.⁴⁶ (B) Number of malaria hospital admissions in Ethiopia.⁶ (C) Proportion of hospital admissions due to malaria in Fajara, The Gambia.⁴⁰ (D) Incidence of paediatric malaria hospital admissions (hospitalisations per 1000 children in the hospital catchment area) in Kilifi, Kenya.¹¹ (E) Number of malaria cases in Limpopo, South Africa.³⁶ (F) Number of malaria cases in Sao Tome and Principe.⁴⁸ (G) All cause mortality in children less than 5 years of age per 1000 births in Bioko Island, Equatorial Guinea.⁴⁹ ACT=artemisinin combination therapies. LLITNs=long-lasting insecticide-treated bednets. ITNs=insecticide-treated bednets. CQ+SP=chloroquine with sulfadoxine plus pyrimethamine. IRS=indoor residual spraying.



Awareness

- Area geografica
- Itinerario
- Durata del soggiorno
- Storia
- Sistema immunitario
- Fattori di rischio
- Adesione
- Disposizione
- Ecologia

Corrisponde alle strategie operative del ciclo del parassita

- **Febbre**
- **Brividi**
- **Cefalea**
- Dolori muscolari
- Nausea o vomito
- Dolori addominali / diarrea

96%

96%

- Prognosi
- Terapia
- Prevenzione

Bite prevention



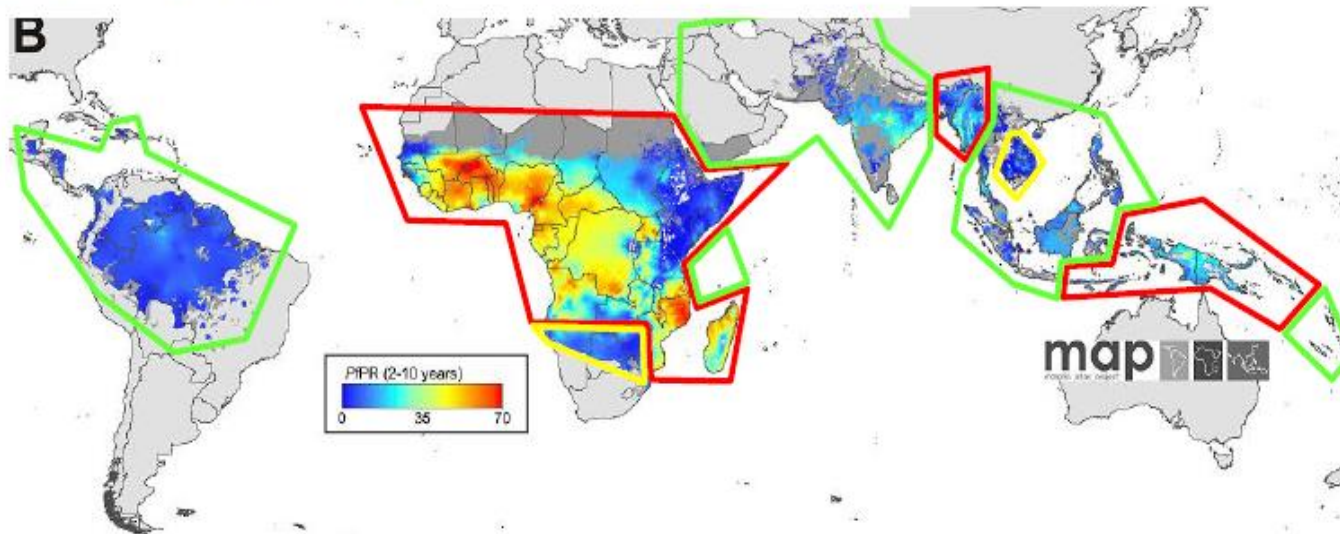
Chemoprophylaxis: aree geografiche

Appendice 2.

Indicazioni di prima scelta per la profilassi antimalarica secondo le zone geografiche.

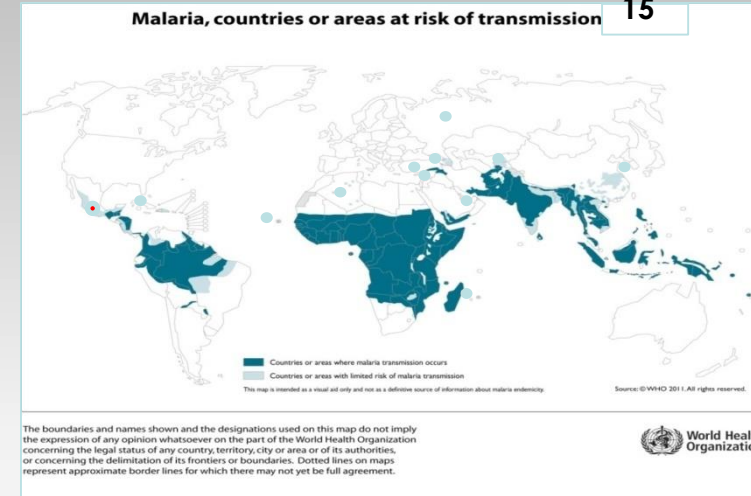
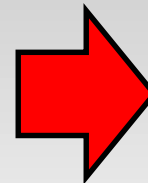
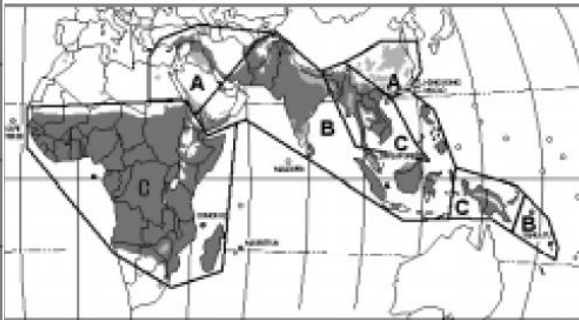
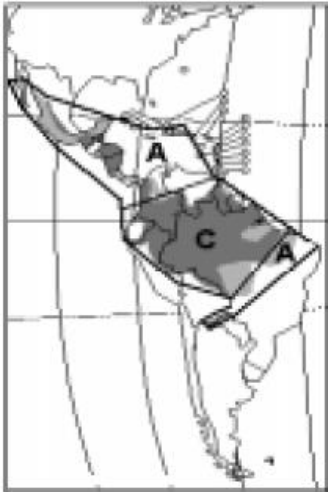
- Indicata chemioprolissi.
- Indicata chemioprolissi con alcune limitazioni.
- Indicato trattamento presuntivo.

(Modificato da: Gething et al. A new world malaria map: *Plasmodium falciparum* endemicity in 2010. Malaria Journal 2011, 10:378 <http://www.malariajournal.com/content/10/1/378>).



Chemoprophylaxis

L'evoluzione delle linee guida



20
15

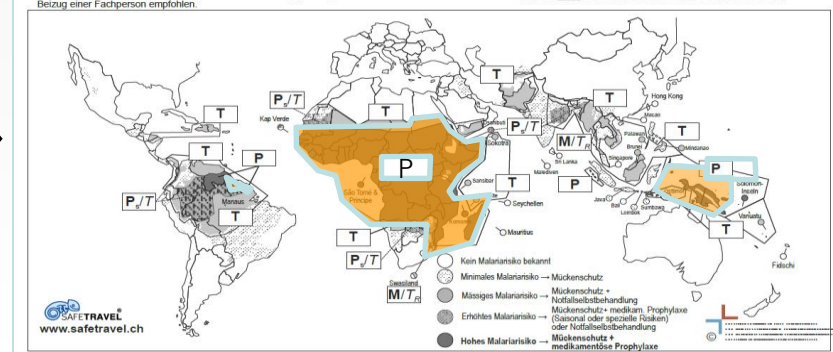
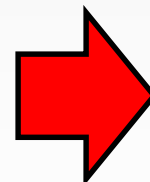
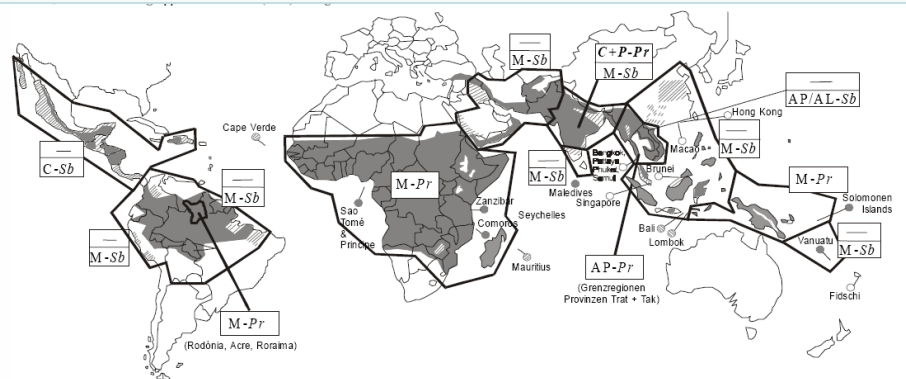


Malariaprofylaxe 2018

Empfehlungen des "Expertenkomitees für Reisemedizin" (EKRM/Schweiz).

- 1.) Mückenschutz (Expositionsprophylaxe) wird in allen Malariaendemiegebieten empfohlen, auch in Regionen* mit minimalem Übertragungsrisiko.
 - 2.) Eine medikamentöse Prophylaxe und/oder das Mitnehmen einer Notfall selbstbehandlung werden je nach Reisebestimmung* und speziellen Risiko** empfohlen.
- Eine detaillierte Liste der Länder wird regelmäßig im Bulletin des Bundesamtes für Gesundheit publiziert (Dokument: Reisemedizin - Impfungen und Malaria schutz bei Auslandsreisen (www.bag.admin.ch/reisemedizin)). Hinweise zu speziellen Risiken (Langzeitreisende, Schwangere, Kleinkinder, komplexe Komorbidität, Immunsuppression etc.) werden im Bulletin (vgl. oben) publiziert. Allenfalls Bezug einer Fachperson empfohlen.

P	Medikamentöse Prophylaxe mit Atovaquon/Proguanil[AP], Mefloquin[MB] oder Doxycyclin[DP]
P/T	Zu gewissen Jahreszeiten «saisonal» (vgl. Listen BAG), evtl. Überweisung an Fachperson) keine eine medikamentöse Prophylaxe mit Atovaquon/Proguanil[AP], Mefloquin[MB] oder Doxycyclin[DP] indiziert sein. Allenfalls Notfall selbstbehandlung mit Artemether/Lumefantrin[ALT] oder Atovaquon/Proguanil[AP].
T	Keine medikamentöse Prophylaxe empfohlen. Notfall selbstbehandlung mit Artemether/Lumefantrin[ALT] oder Atovaquon/Proguanil[AP].
M/T	Keine medikamentöse Prophylaxe empfohlen. Notfall selbstbehandlung mit Artemether/Lumefantrin[ALT] oder Atovaquon/Proguanil[AP] in speziellen Situationen* (vgl. Text im BAG-Bulletin).



Diagnosi precoce

Trattamento presuntivo di Emergenza (SBET)

Voumard et al. *Malaria Journal* (2015) 14:139
DOI 10.1186/s12936-015-0654-y



RESEARCH

Open Access

Recommendations for malaria prevention in moderate to low risk areas: travellers' choice and risk perception

Rachel Voumard¹, Delphine Berthod², Clotilde Rambaud-Althaus³, Valérie D'Acremont^{1,3} and Blaise Genton^{1,2,3*}

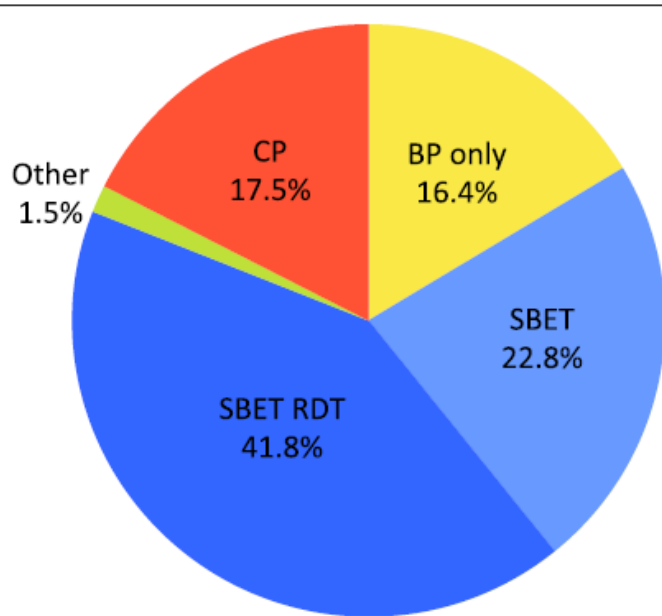
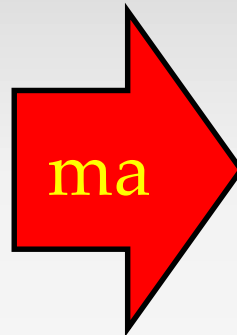


Figure 3 Travellers choices regarding preventive strategies against malaria if prevention is free (n=391). CP= Chemoprophylaxis, BP only= Bite prevention only, SBET= Stand-by emergency treatment, SBET RDT= Stand-by emergency treatment with rapid diagnostic tests, Other= CP+SBET+/- RDT.



Schlagenhauf, Bull WHO 1995

Nothdurft, Trop Med Parasitol 1995

Vinnemeier, Malar J 2017

Ferrara, Malar J 2018

→ SBET non è soddisfacente

<10% febbre

<10% in area remota

<5% SBET

<1% malaria



International Society of Travel Medicine
Promoting healthy travel worldwide
Established 1991

Journal of Travel Medicine, 2017, 1–2
doi: 10.1093/jtm/tax034
Perspective

Perspective

Standby emergency treatment of malaria for travellers to low transmission destinations. Does it make sense or save lives?

Prof. Ron Behrens, MD, FRCP*

**1 malaria/milione
1 P.falciparum/3.5 milioni**

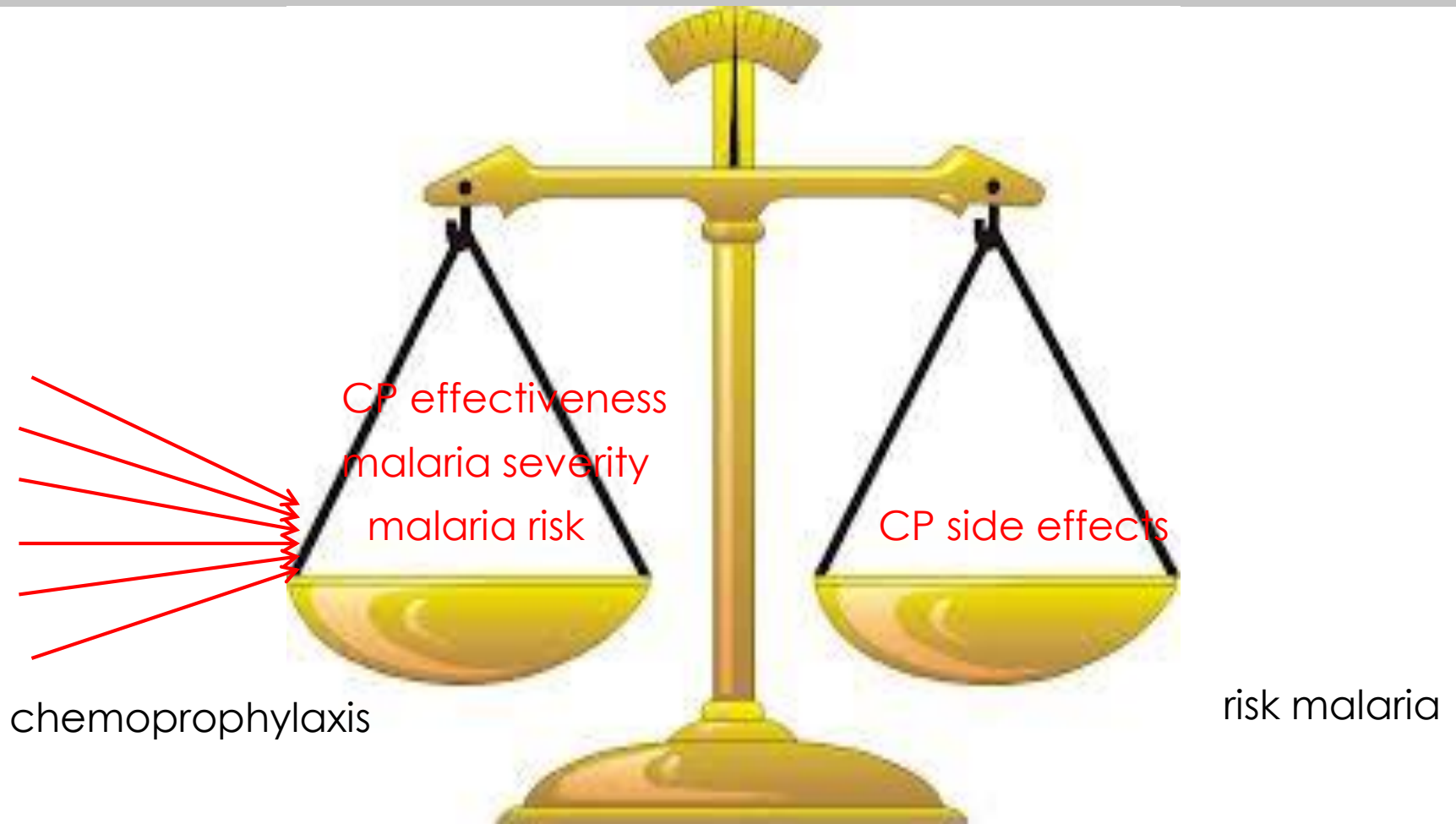
**Polmonite
Sepsi
Endocardite**

Conclusioni

- ✿ Conoscere bene la geografia
- ✿ Valutare accuratamente rischio generale e rischio individuale
- ✿ Valutare accuratamente beneficio (conoscere epidemiologia)
- ✿ Spiegare bene tutti gli aspetti della malattia
- ✿ Spiegare bene tutti gli aspetti del vaccino/profilassi
- ✿ Insistere sull'importanza del comportamento



Rischi e benefici





A.S.L. TO2



Divisione di Malattie Infettive I,
Servizio di Medicina dei Viaggi
Ospedale Amedeo di Savoia - Torino

4° Co
di Medici
e delle

15-16

Sala Congressi
C.so Ferr



A.S.L. TO2
Azienda Sanitaria Locale
Torino Nord



Fondazione Carlo Denegri

Divisione di Malattie Infettive I, Servizio di Medicina dei Viaggi - Ospedale Amedeo di Savoia, Torino

Congresso di Medicina dei Viaggi e delle Migrazioni - 5ª Edizione



Congresso di Medicina dei Viaggi e delle Migrazioni 7ª edizione



Torino
4-5 maggio 2017

Salone congressi Gruppo Abele
corso Trapani 91/b, Torino

Congresso
e de

14-1

Environment

Con il patrocinio di

Azienda Sanitaria Locale
"Città di Torino"



Fondazione Carlo Denegri

REGIONE
PIEMONTE

SIMIT
Società Italiana
Medicina dei Viaggi

SIMM
Società Italiana
Medicina delle Migrazioni

UNIVERSITÀ DEGLI STUDI DI TORINO
Scuola di Medicina

Congresso di Medicina dei Viaggi e delle Migrazioni

8ª edizione

Torino

aprile 2019

guido.calleri@ascittaditorino.it