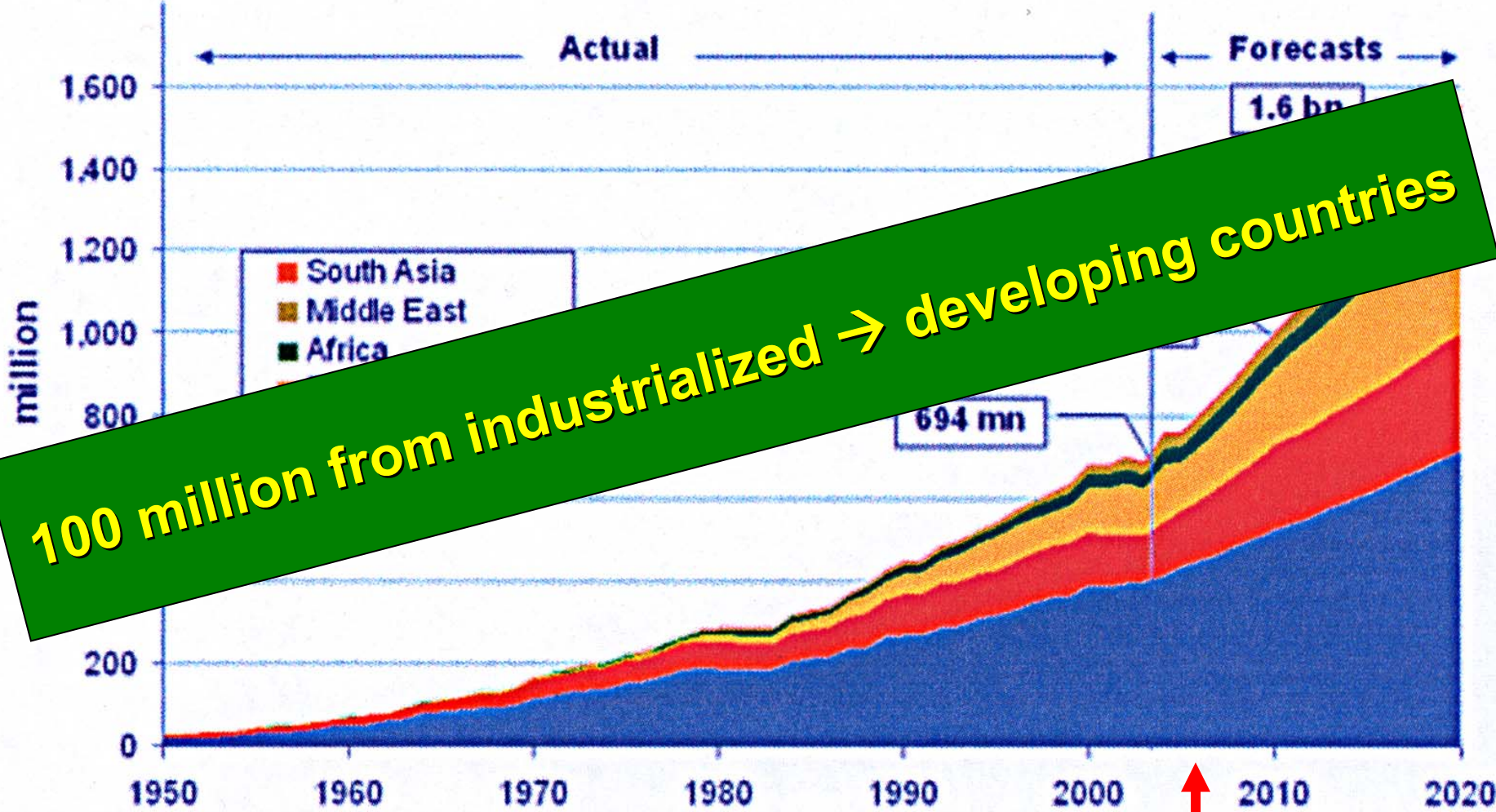


Hepatitis A prevention in travelers

- Global **travel market** trends
- **Current** risk in „developing“ countries
- Anti-HAV seroprevalence in **middle-income economics**
- WHO hepatitis A **prevention strategy** in travelers
- **Compliance** with recommendations
- **Exposure to hepatitis A risks**
- **Conclusions – new strategy needed ?!**

International Tourist Arrivals, 1950-2020

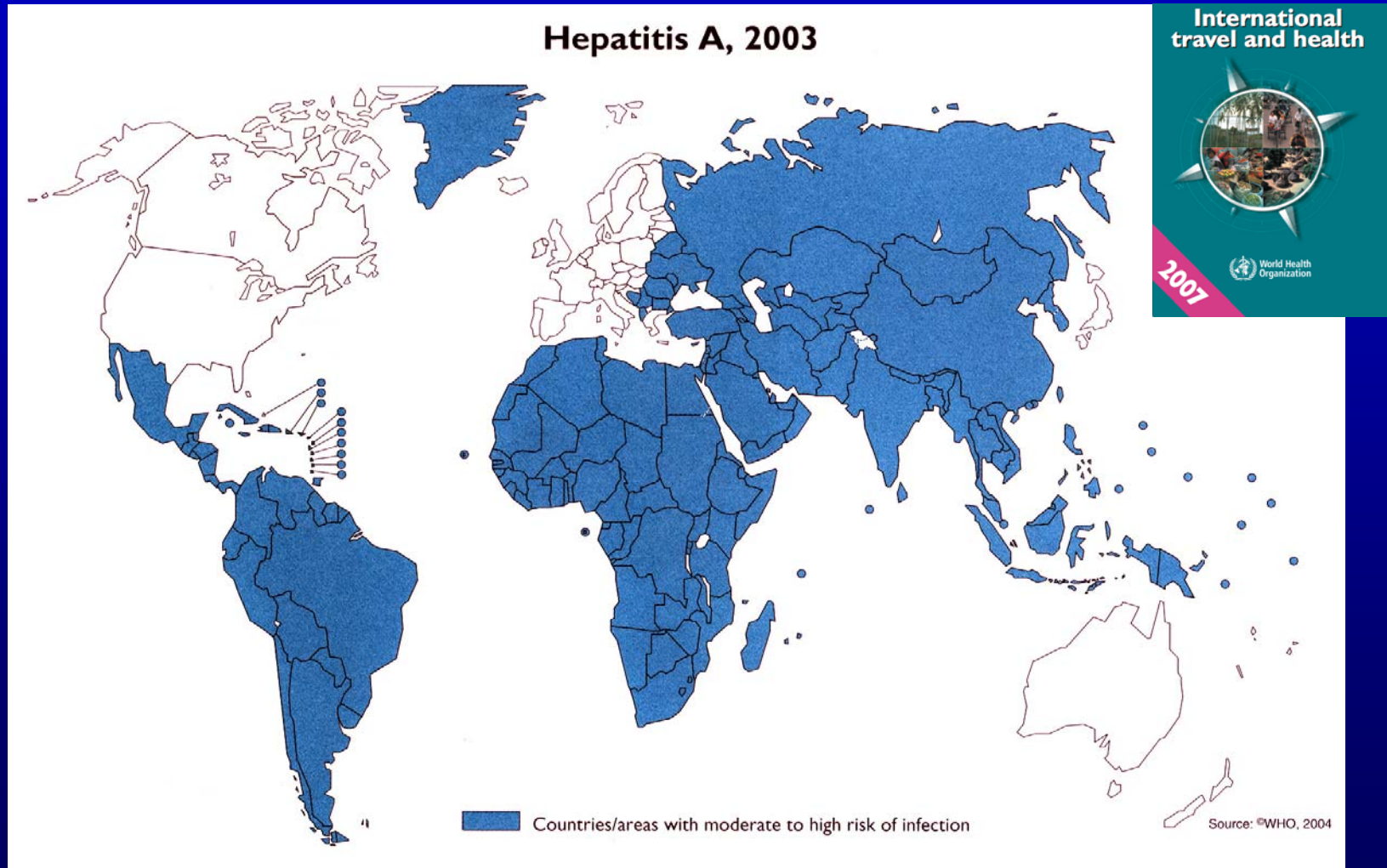


Source: World Tourism Organization (WTO)

Travel market forecasts – Annual growth rate 1995 - 2020

Region	Market Share		Average %
	1995	2020	
World	100.0	100.0	4.1
Europe	59.8	45.9	3.1
Americas	19.3	18.1	3.8
Africa	3.6	5.0	5.5
South Asia	0.7	1.2	6.2
E Asia/Pacific	14.4	25.4	6.5
Middle East	2.2	4.4	6.7

WHO Map of HAV Risk Areas



Cohort studies on hepatitis A in non-immune travelers to developing countries

Cases	Subjects	Duration of stay	Incidence rate	Ref Year(s)
7	7887 Swiss travelers, 60% non-immune (?)	mean 19 days	1 per 300	1 1981-84
52	108 French foreign aid volunteers	18-35m	1 per 50	2 1979-80
67	US Foreign Service personnel (n?)	N / A	≤1 per 5,000	3 1990-93
325*	Canadian travelers	variable	1 per 3000	4 1996-2001

Ref 1: Steffen R et al. J Infect Dis 1987;156:84-91

Ref 2: Larouzé B et al. Am J Epid; 1987;126:31-37

Ref 3: Wolfe MS. J Infect Dis 1995;171, Suppl 1, S29-32

Ref 4: Teitelbaum P. J Travel Med 2004;11:102-107 – * estimated

NEW DATA: Importation of Hepatitis A, Switzerland 1988-2002

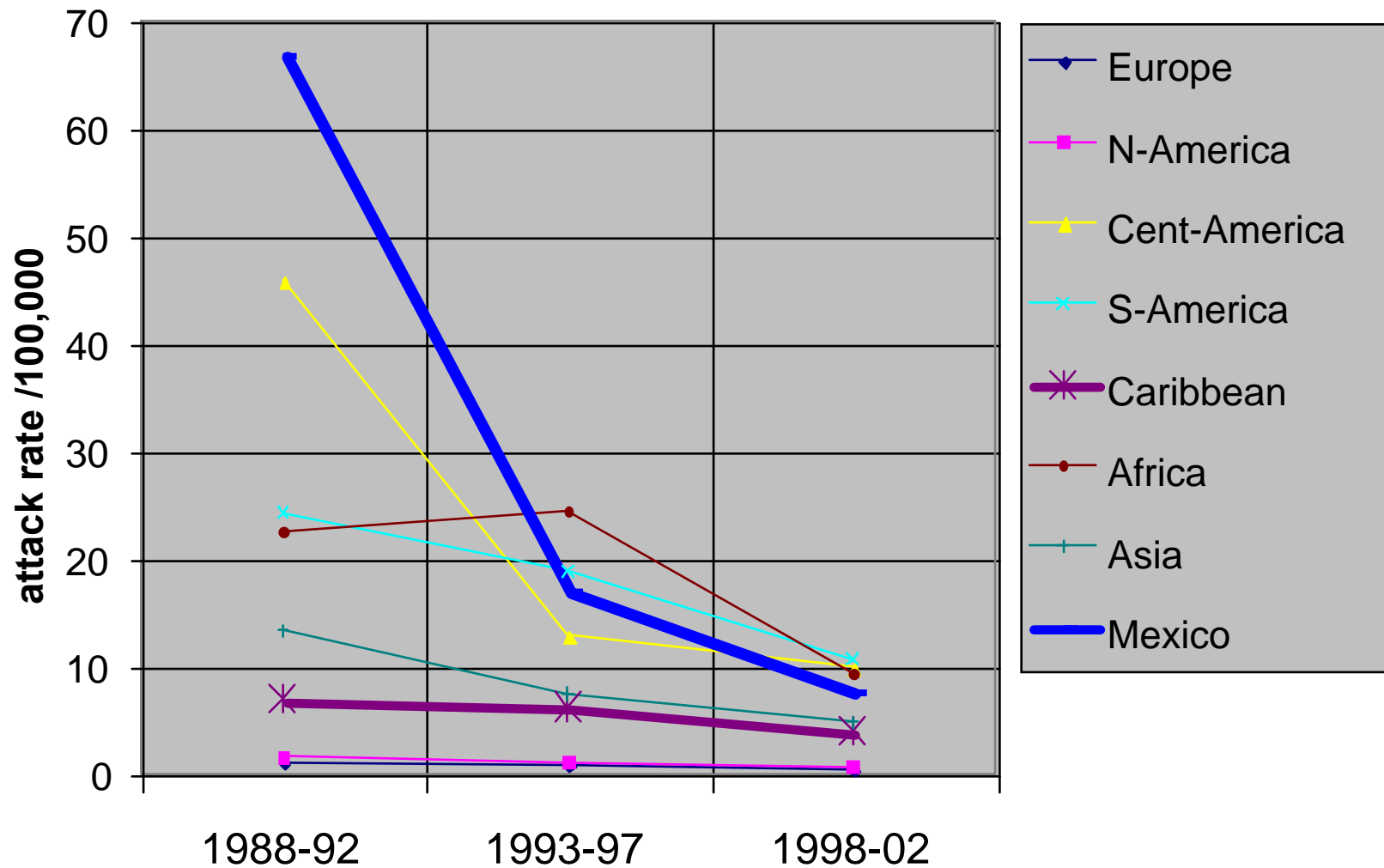
Yugoslavia (Ex-)	226	
Turkey	167	(secondary outbreaks)
Italy	164	
Spain	147	
France	131	
India	110	
Morocco	109	
Brazil	84	
Mexico	71	
Egypt	69	
Tunisia	67	
USA	56	
Thailand	48	
Germany	43	
etc.		
Total	2581	with travel history

Consider: UNDERREPORTING!

- no laboratory report rare (<20%)
- no M.D. report missing details

- diagnosed and treated abroad n unknown!!
- not diagnosed
 - asymptomatic secondary cases!
 - symptomatic rare

Hepatitis A attack rate in non-immune Swiss travellers



Monthly incidence rates of Hepatitis A in non-immune travelers to developing countries

	INCIDENCE RATE / MONTH	HA VACCINATION
Travel to:		
- Developing country	>0.1 / 1000	Recommended
- Asian / African Mediterranean	<1/1000	Recommended
- Eastern Europe	0.1/1000	Recommended, especially to VFR (!)
- Southern Europe	<<0.1 / 1000	No recommendation

now 1:3000

Old 'Steffen – Rate' 1:300 is obsolete!

Hepatitis A outbreak Europe 2004

352 tourists (mainly Germans) diagnosed after a stay in the Siva Grand Beach Hotel, Hurghada, Egypt



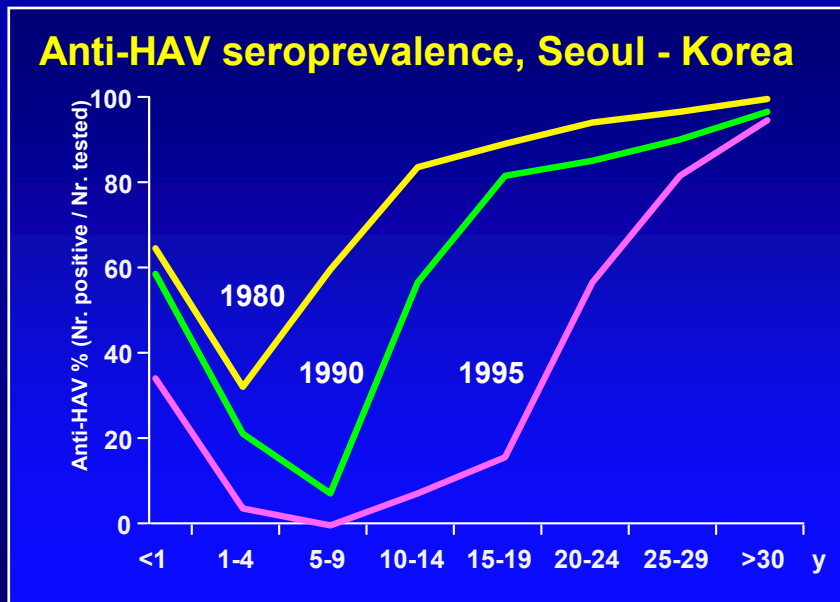
2005: – Russia
– Turkey → Holland



.... but risk less as compared to low-budget places.

Asians adults immune to hepatitis A?

NO: Hygiene → shift towards low endemicity

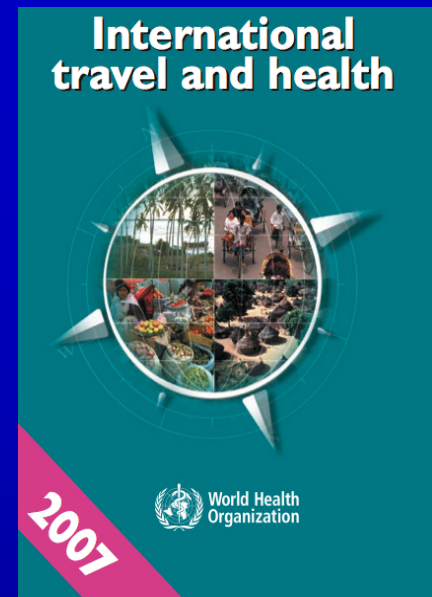


- Urban areas (e.g. Korea, China, Singapore)
- High income class
- Improved infrastructure (e.g. Kerala vs. rest of India)
- Ethnic origin (e.g. Israel, KSA)

Poovorawan Y et al. J Gastroenterol Hepatol 2002;17 Suppl:S155-66

Symposium on Epidemiologic Changes of Hepatitis A Infection in Korea. Jeju Island, June 14, 1997

- Hepatitis A **most common** vaccine preventable infection is travellers (except influenza)
- **Impact ! (Incapacitation, CFR)**
- Vaccine should be **considered for all** (non-immune) travellers **to areas with moderate to high risk** and
- those at high risk **strongly encouraged** to accept vaccination



Hepatitis A: Options for Prevention

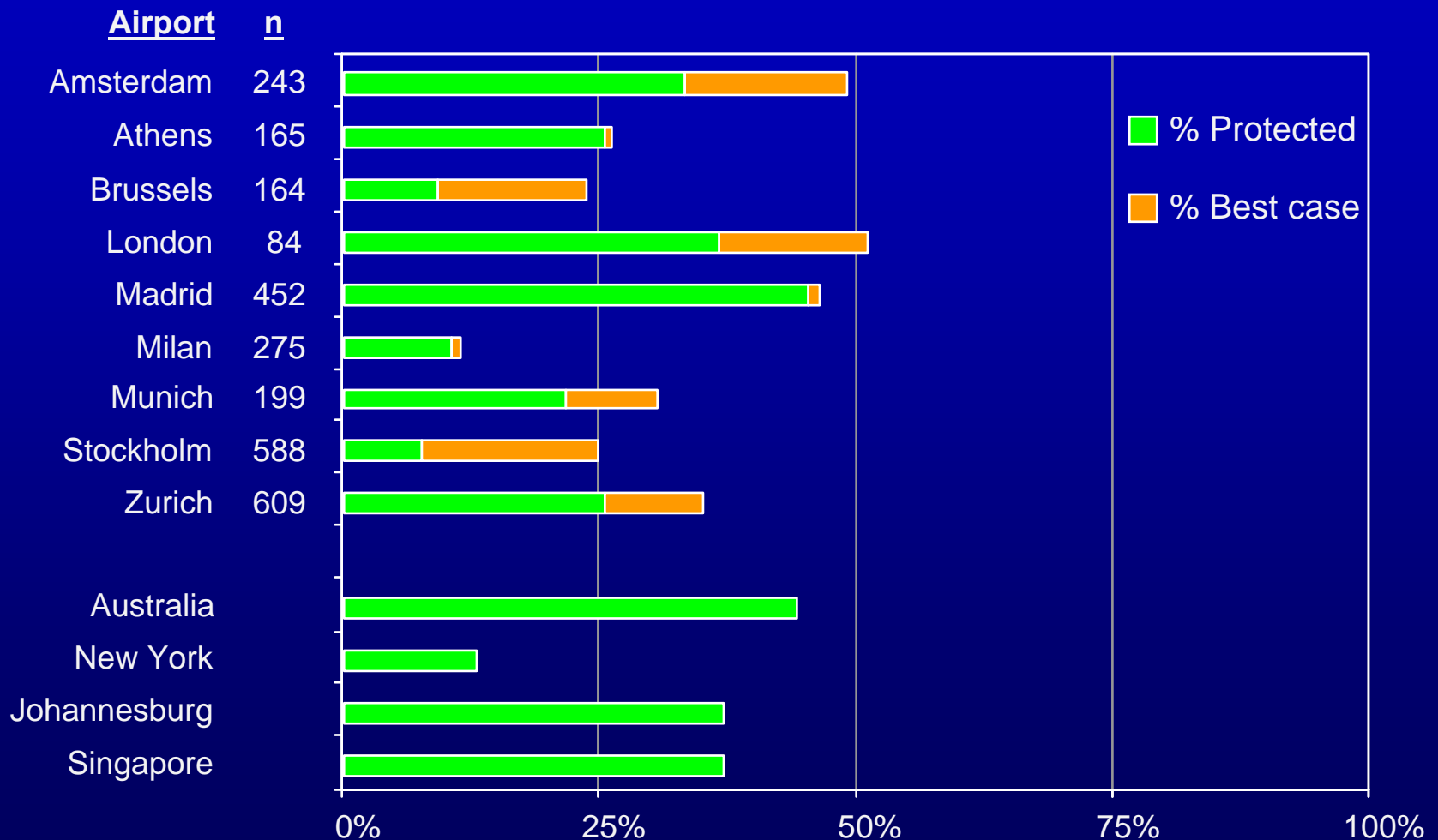
Reduction of risk exposure!

"Boil it, cook it, peel it — or forget it!"



Europeans, Americans: >90% NON-compliant

Proportion of anti-HAV positive travelers to developing countries

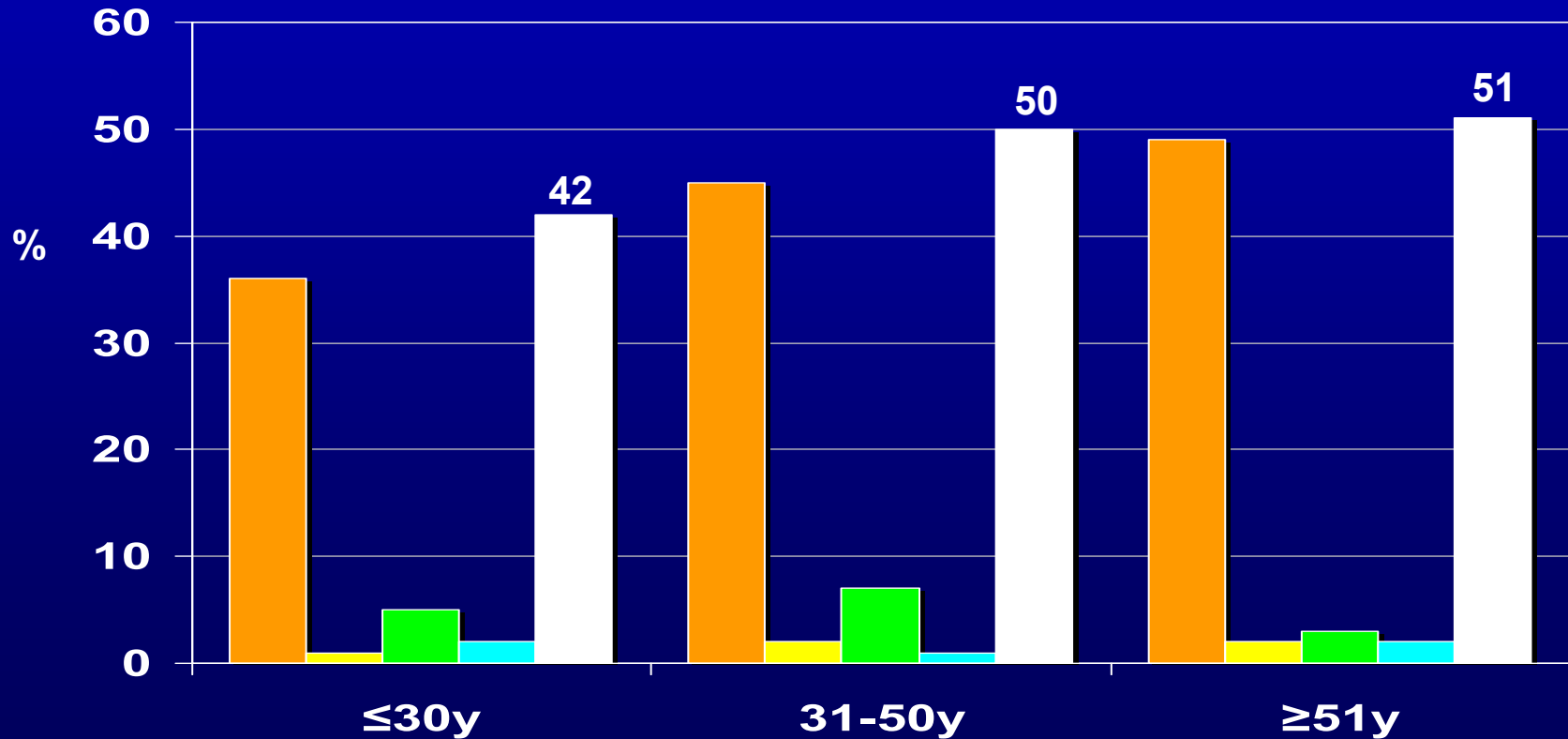


Prevalence of exposure to HAV

based on national immunization recommendations

USA

Travel Occup Behaviour
Other illness Total

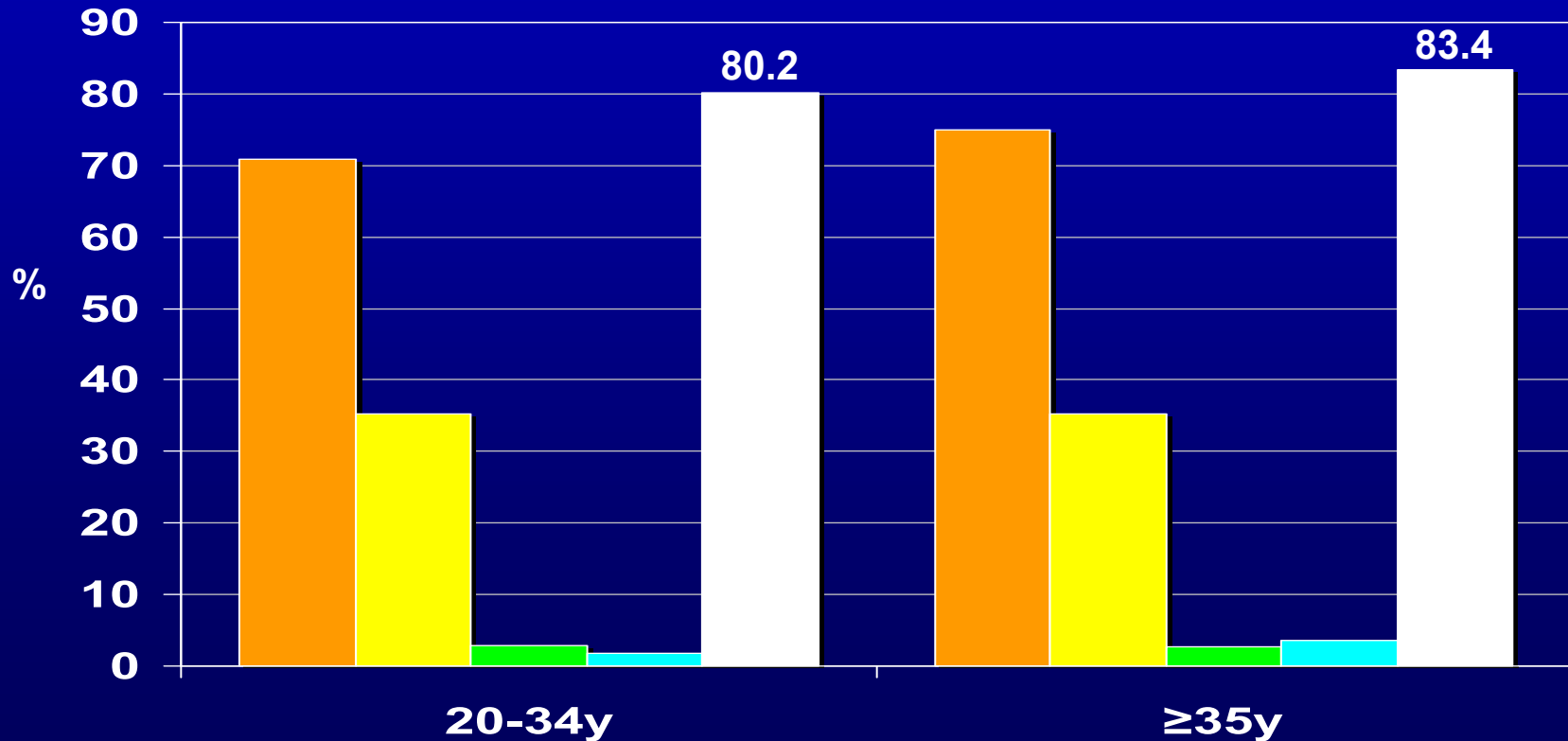


Prevalence of exposure to HAV

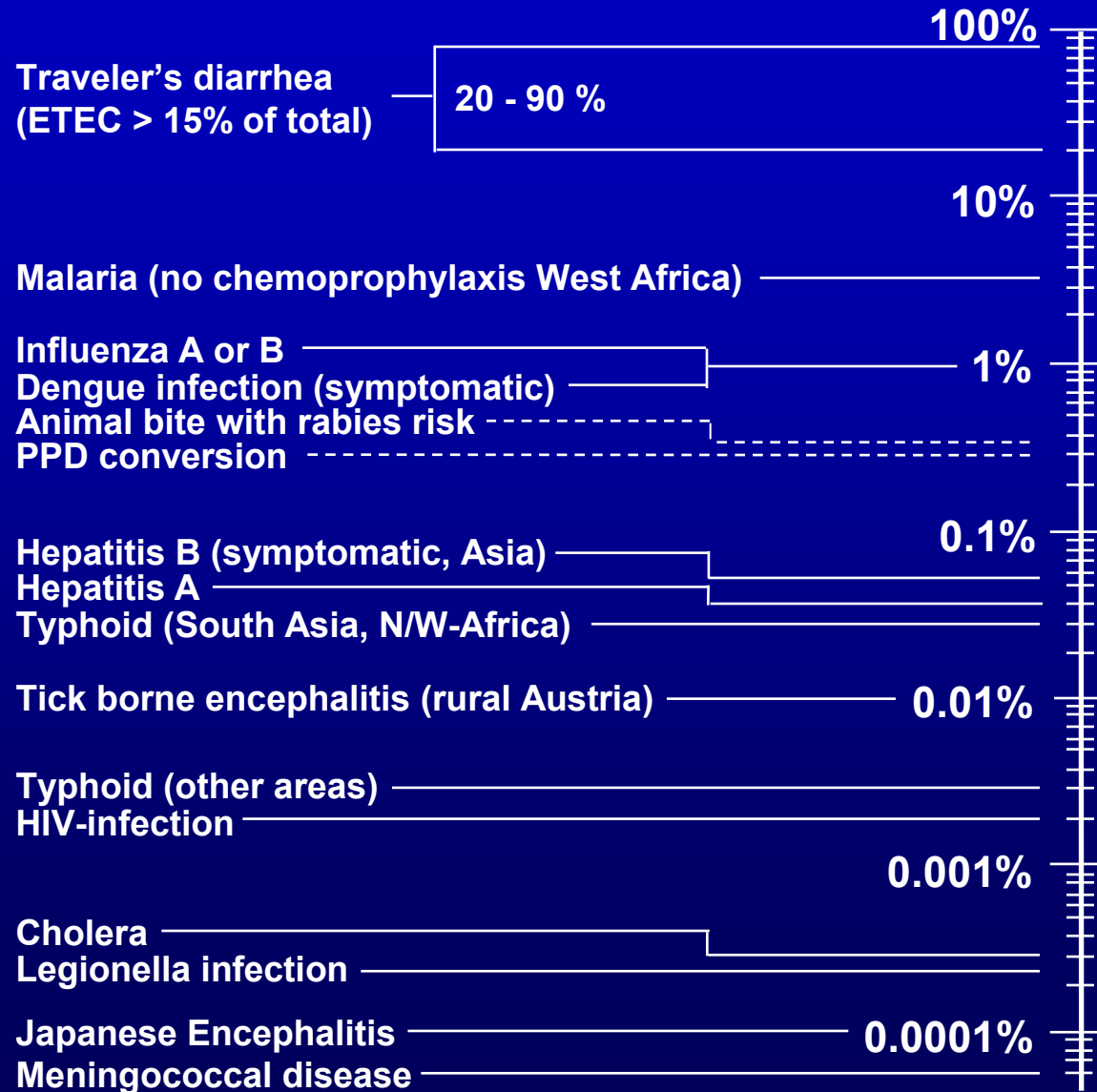
based on national immunization recommendations

Switzerland

Travel Occup Behaviour
Other illness Total

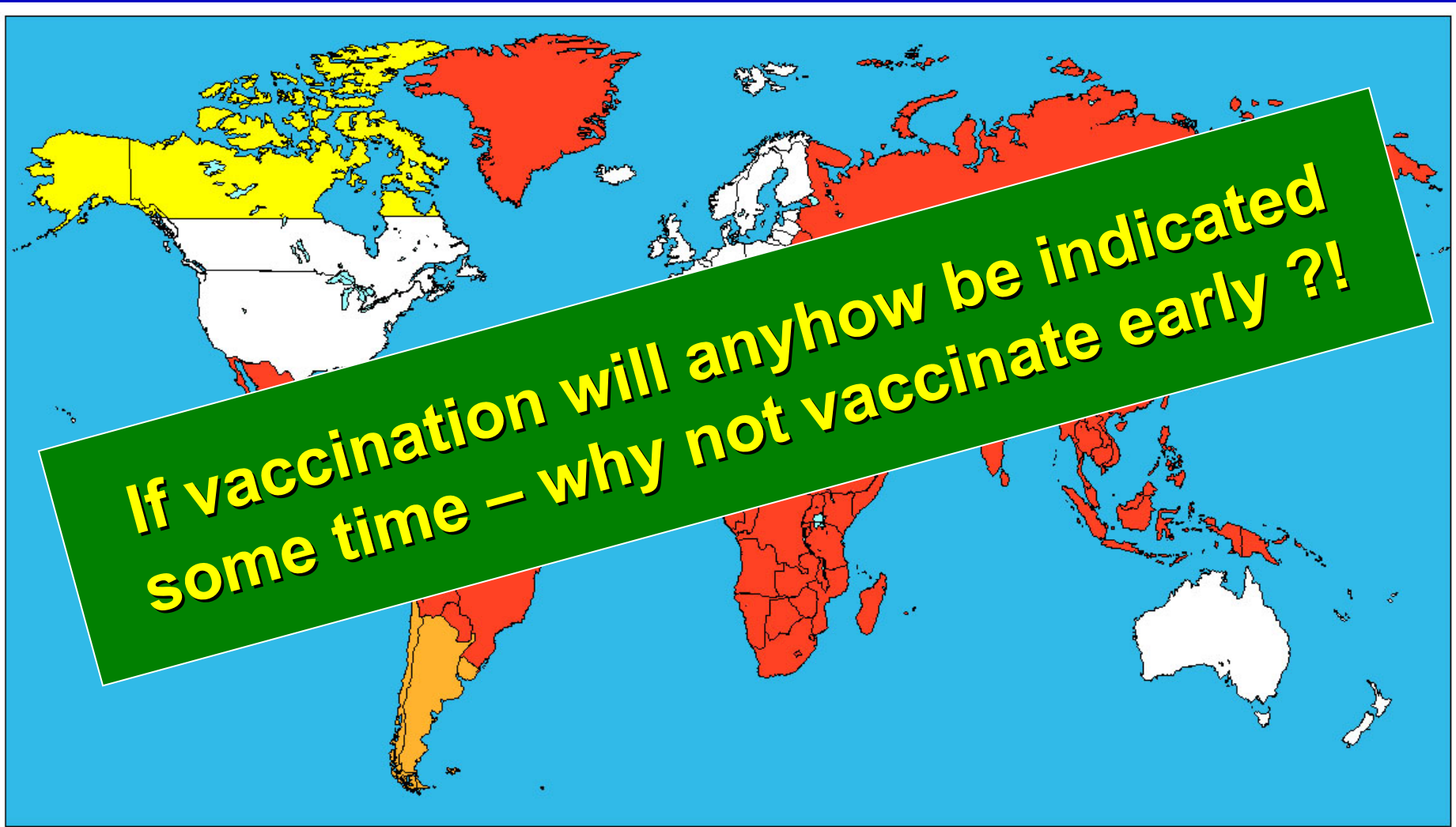


Incidence rate / month of health problems during a stay in developing countries – 2008



Conclusions

- **Persisting risk of HA in travelers**
- **Risk of infection ↓ x 10 (S. Europe!)**
- **New target populations in middle-income economics**
- **Unsatisfactory compliance among travelers**
 - food/beverage intake
 - Vaccination
- **In some countries, HA vaccination will be indicated in a large majority of the population at some stage in life**



**If vaccination will anyhow be indicated
some time – why not vaccinate early ?!**

Risk high/medium ■ HA + HB ■ HA ■ HB

(Advantage: combined Hepatitis A + B vaccine)