



Travel vaccines in general practice:
Challenges and approaches to vaccinating
the outbound traveller

Dr Deborah Mills Medical Director of a full-time specialised Travel Medicine clinic, Brisbane 11:30



Travel Vaccines in General Practice:
Challenges and Approaches to
Vaccinating the Outbound traveller

Dr Deb Mills
MBBS MPHTM
7.10.23

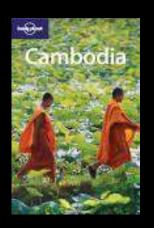


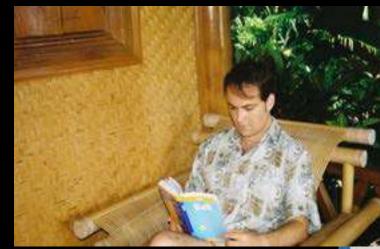
CONFLICTS of INTEREST

- Given talks for Sanofi, Sequiris, GSK
- Research funding Sanofi
- Book
- Run a Travel Clinic

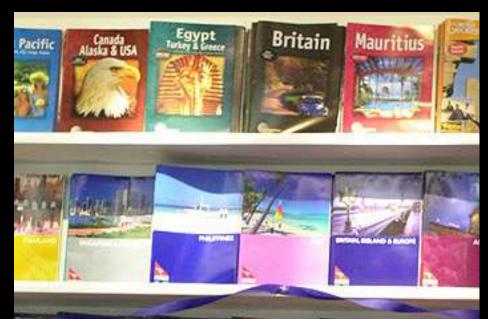
Travel medicine is more than just vaccines

What they don't tell you...





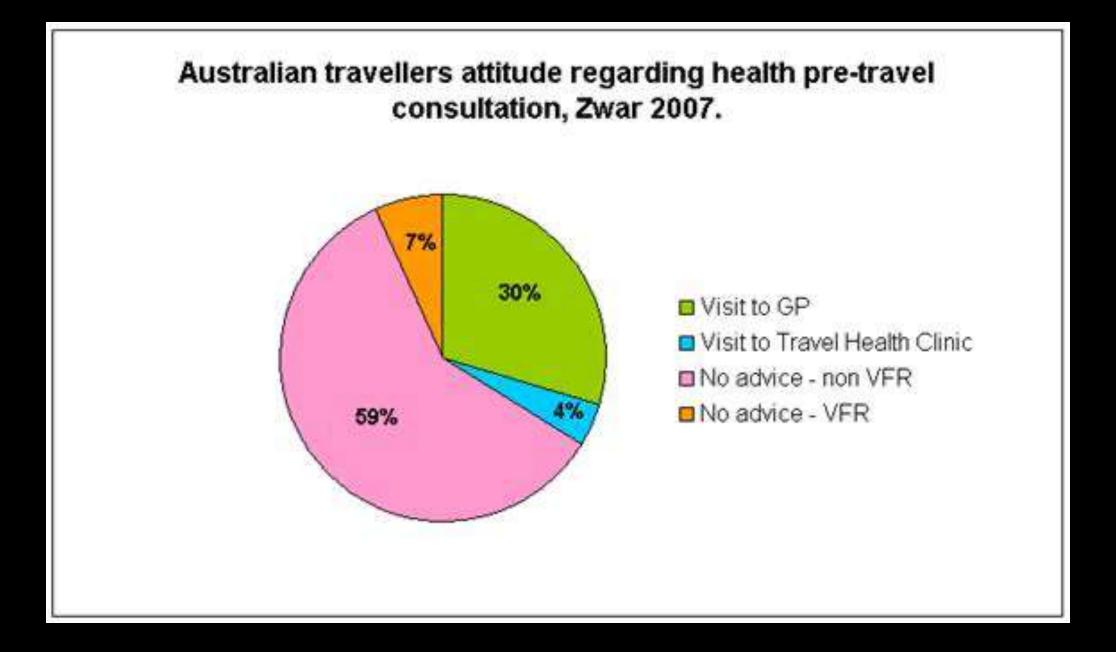






What they don't tell you...





The major reason ...perceived low risk of infection while travelling

Past pre-travel vaccine uptake was associated with

- increasing age (OR = 1.17) and
- travel to higher-risk destinations (OR = 2.92)
- BUT VFRs were less likely to have received pre-travel vaccines (OR = 0.74 [0.56–0.97] p = 0.028)

Travellers don't realise what is involved and how much time it takes ...

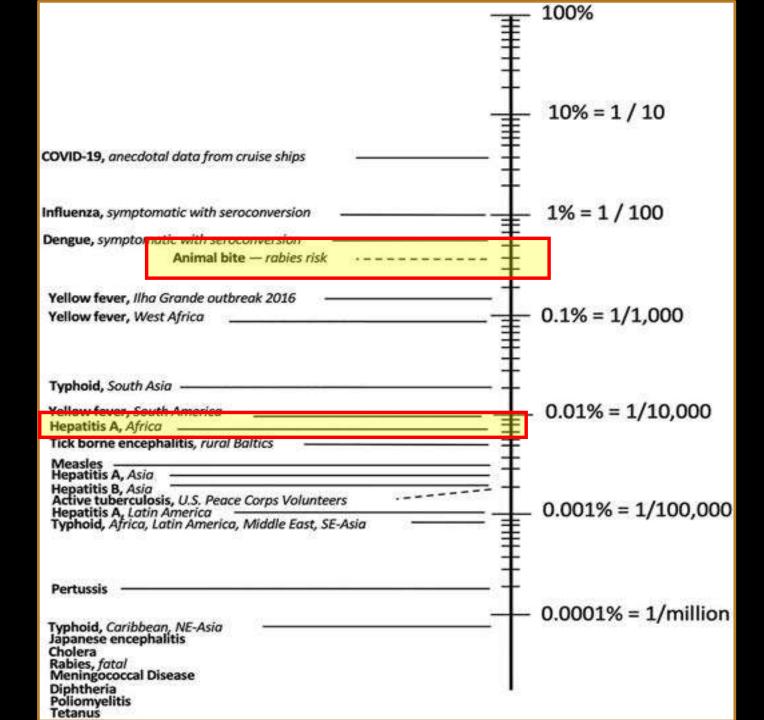
During pap smear / URTI/ BP script etc

"I'm going to XYZ... do I need anything..."

.. Need to make a separate appointment

Figure 1 Incidence rate per month of VPDs in travellers; best estimate for non-immunes

J Travel Med, taad085, https://doi.org/10.1093/jtm/taad085



Everything starts with History

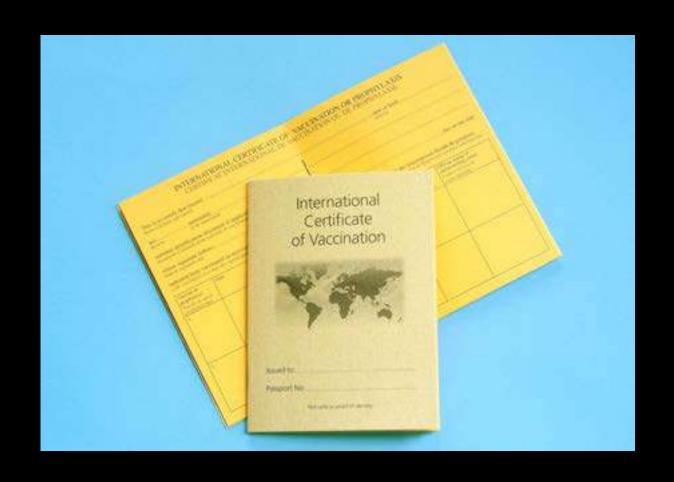
- **Been before? Where? When?**
- **Problems while away?**
- **Previous vaccine records?**
- **Past Medical history / medications**
- This trip
 - Where // When // Why //Who
 - How long
 - What activities / accommodation/ food

Previous vaccine records

Australian Immunisation record?

Old vaccine books

Serology for some things



Serology?

- Measles
- Mumps
- Rubella
- Varicella
- Hep B
- Hep A (mostly for disease)

Travelling Well

HOW VACCINES ARE GIVEN

| POLIO | IPV / Adacel Polio / Boostrix IPV injection One dose of IPV if the original course was given in childhood/ school. Available combined with Adacel and Boostrix. (Oral Sabin has been discontinued in Australia.) |
|--|--|
| TETANUS DIPHTHERIA WHOOPING COUGH | Adacel / Boostrix / ADT / Tetanus Toxoid Tetanus booster is one injection if the original course was giver in childhood. Usually given combined e.g. Adacel or Boostrix = Tetanus, Diphtheria, Whooping cough (Pertussis) ADT = Adult Diphtheria & Tetanus |
| HUMAN PAPILLOMA | Gardasil 9 injection Dose depends on age. 9-14 years age: two injections 0, 6months. Over 15 years age: three injections 0, 1-2 months, 6 months |
| MEASLES MUMPS RUBELLA | Priorix* / MMR II* injection (Rubella is also known as German measles). Two injections give lifetime protection. |
| CHICKENPOX | Varivax* / Varilrix* injection Two injections: 0, 1-2 months: Zostavax* injection One injection protects against shingles. |
| INFLUENZA | Fluvax / Vaxigrip / Intanza / Fluarix injection Adult: one injection. Child: 6mth-9yrs: two injections 0, 1mth |
| PNEUMONIA | Prevenar injection Adult: one injection. Pneumovax injection Adult: one injection. |
| TYPHOID | Typhim Vi / Typherix injection / Vivotif* Oral One injection, or 4 capsules taken Day 1, 3, 5, & 7. Preferably given at least 2 weeks before departure. |
| TYPHOID + HEPATITIS A | Vivaxim = Typhim Vi + Avaxim One injection protects against Typhoid and Hepatitis A. Booster for Hepatitis A in 6 - 12 mths for lifetime protection. |
| HEPATITIS A | Avaxim / Vaqta / Havrix injection One initial dose, then a booster at 6-12 months. |
| HEPATITIS A+B | Twinrix injection Three injections: 0, 1 month and 6 months. |
| HEPATITIS B | HBVax II / Engerix B injection Usually three injections: 0, 1 month and 6 months. Rapid course: 0, 1, 2, 12 months or 0, 1 wk, 4 wks, 12 months. |

| MENINGITIS | ACWY - Menveo / Menactra / Nimenrix One injection, given at least 2 weeks before travel. B - Bexsero Two injections, spaced 1-2 months apart. | | | | | | |
|----------------------------|---|---|--|---|--|--|--|
| YELLOW FEVER | | I* injection ion, given at le | st 10 d | lays before travel. | | | |
| CHOLERA/ETEC | Dukoral oral Over 6 years of age: two doses of drink, given one week apart. Usually given 3 weeks before travel. Vaccine gives some protection against ETEC diarrhoea for three months. | | | | | | |
| JAPANESE B ENCEPHALITIS | Imojev* | Jespect / Ixiaro injection Two injections, spaced a month apart. Imojev* injection One dose for adults. | | | | | |
| TICK-BORNE ENCEPHALITIS | Encepur / FSME-IMMUN injection Regular course: three injections: 0, 1-3 months, 5-12 months Rapid course: two injections: 0, 14 days. | | | | | | |
| RABIES | HDCV / Rabipur / Verorab injection | | | | | | |
| | Options | Before bite | | After bite | | | |
| | 1 | Nothing | Bine | RIG+ 0, 3, 7, 14, (28) days | | | |
| | 2 | 0, 7, (28) shays | Bite | 0, 3 days | | | |
| | If you as Rabies I on the d available of vaccis If you A time to s vaccine | mmune Globul lay of the bite. I e in many cour ne in the arm o RE pre-immun | munise in (RIC RIG is a stries. I ver the ised by | d, when bitten - you need i) injected into the bite wound blood product and not fus you need four to five dose next month. fore exposure, you have more y need two further doses of | | | |
| TUBERCULOSIS | BCG* injection One injection, usually given in childhood. BCG vaccine does not work well in adults. A tuberculosis test (QuantiFERON or Mantoux) may be recommended before travel, to document immunity. If necessary, the test is repeated 3 months after return home. | | | | | | |
| Q FEVER | Q-VAX i One inject | njection ion, given at le | tst 2 w | eeks before exposure. A skin | | | |

and COVID

* Live paccines

Before You Go

Vaccine GRID

Grid is useful for scheduling courses

Travelling Well Before You Go

PERSONAL VACCINATION SCHEDULE (TO BE FILLED IN BY YOUR DOCTOR)



DATE:

| Polio | | | |
|---------------------------------|--|-----|--|
| Tetanus / Diphtheria / Wh.cough | | | |
| HIB | | | |
| Rotavirus | | | |
| HPV (Human papilloma) | | | |
| Measles / Mumps / Rubella | | | |
| Chickenpox or Shingles | | | |
| Influenza | | | |
| Prieumonia | | | |
| Typhoid | | | |
| Hepatitis A | | | |
| Hepatitis B | | | |
| Meningitis ACWY | | | |
| Meningitis B | | | |
| Yellow Fever | | | |
| Cholera / ETEC Diarrhoea | | | |
| Japanese B Encephalitis | | | |
| Tick-borne encephalitis | | | |
| Rabies | | 100 | |
| Tuberculosis | | | |
| Q fever | | | |
| COVID-19 | | | |
| Malaria Tablets | | | |

Don't forget your travellers' medical kit and a letter of authorisation for any tablets, medications or drugs you will be carrying overseas.

Case

- Kiara
- Today for routine 6 mth vaccines
- BTW ..ln 4 months going to INDIA
- for 8 weeks
- "Just family"... (Village wedding)



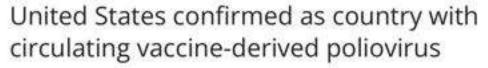
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Media Statement

For Immediate Release: Tuesday, September 13, 2022

Contact: Media Relations

(404) 639-3286

One lifetime booster dose of IPV



TETANUS



DIPHTHERIA



PERTUSSIS



Case

- Kiara
- Today for routine 6 mth vaccines
- BTW ..ln 4 months going to INDIA
- for 8 weeks
- "Just family"... (Village wedding)



Immunisation Schedule Queensland

CHILDREN



Before vaccinating:

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July 2023

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| Polio | * | | | | | |
| Tet/Dip/Pert | * | | | | | |
| MMR | | | | | | |
| Chickenpox | | | | | | |
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| Hepatitis A | | | | | | |
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| Yellow Fever | | | | | | |
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Nearly 40 million children are dangerously susceptible to growing measles threat

23 November 2022 | Joint News Release | Reading time: 4 min (1042 words)

Measles vaccination coverage has steadily declined since the beginning of the COVID-19 pandemic. In 2021, a record high of nearly 40 million children missed a measles vaccine dose: 25 million children missed their first dose and an additional 14.7 million children missed their second dose, a joint publication by the World Health Organization

MEASLES



Cases reported in the first 4 months of the past 6 years (January through April, 2016–2021).

Extra MMR in 6-12 mth old travellers

Regardless of destination





Immunisation Schedule Queensland

July 2023

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https://www.health.pld.jov.pu/likekal-year/lim/godelines-procedures/diseaser-inholosy/inhonoration



12 months



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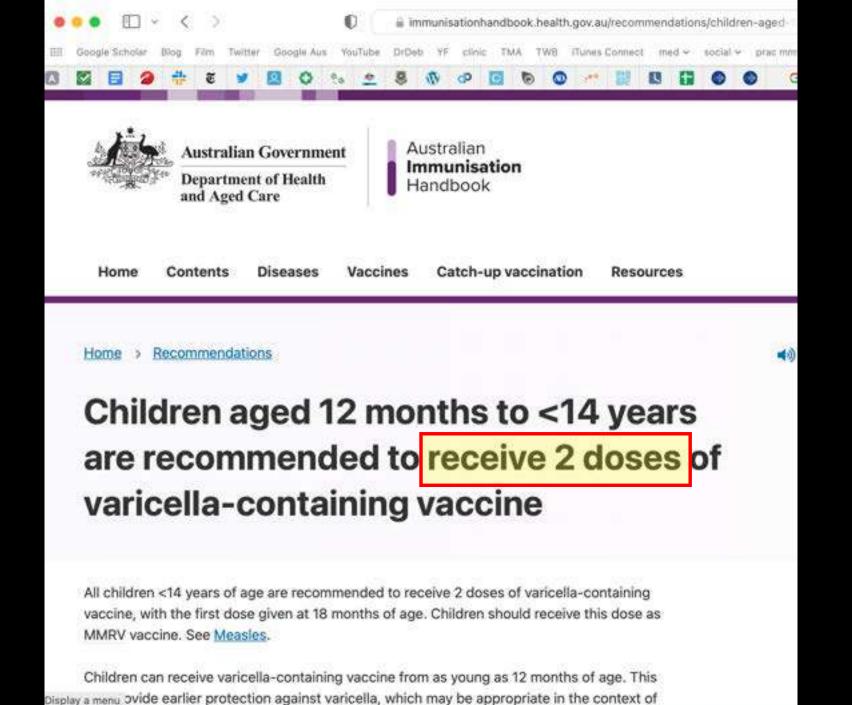
| Measles-mumps- rubella | Priorix R OR MMRII |
|---------------------------|---|
| Meningococcal ACWY | Nimenrix 🖪 |
| Pneumococcal | Prevenar 13 |
| Meningococcal B | Bexsero |
| Hepatitis B | H-B-VaxII paediatric OR Engerix B paediatric |

Still get another (routine) MMR

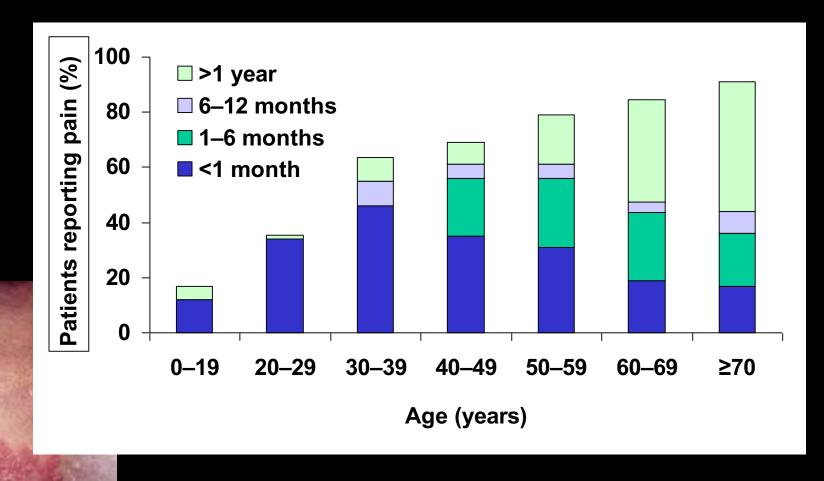
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| Polio | * | | | | | |
| Tet/Dip/Pert | * | | | | | |
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| Chickenpox | | | | | | |
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VARICELLA





Duration of Zoster-Associated Pain According to Age^{1,2}



Influenza

'Rollercoaster of a sickness': how a horror flu season is catching Australian families off guard

About 69% of people admitted to hospital with confirmed influenza since April are aged under 16

- Flu cases are on the rise across Australia. Do I need a winter vaccination?
- Follow our Australia news live blog for the latest updates
- Get our morning and afternoon news emails, free app or daily news podcast





Influenza Vaccination and Reduction in Hospitalizations - (286,000 persons >65 yrs)

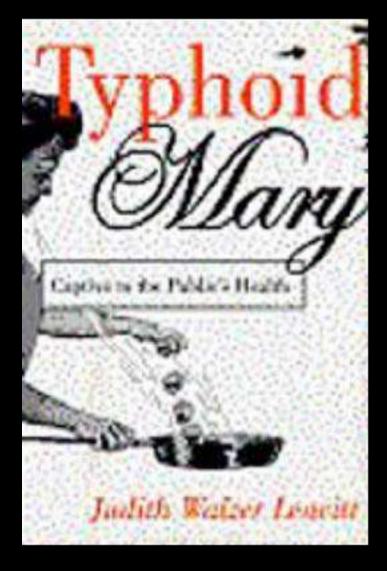
NEJM:Volume 348:1322-1332 April 3, 2003

Influenza vaccination associated with reduction in hospitalization for..

- cardiac disease by 19 percent..,
- cerebrovascular disease by 23 percent....

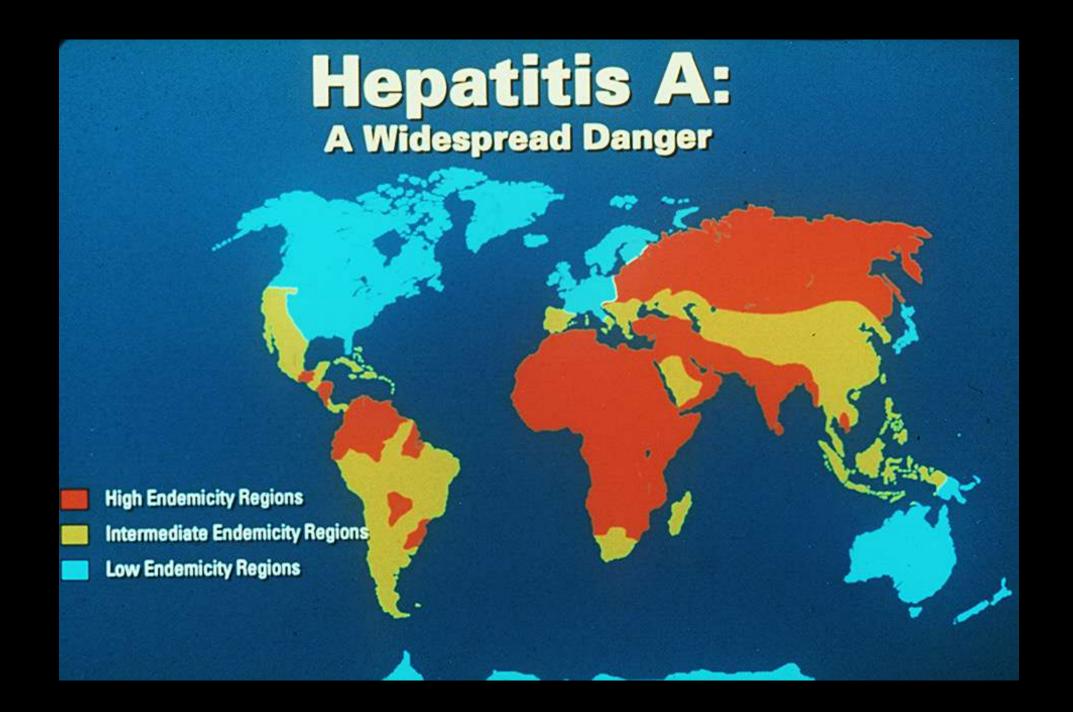
 a reduction in the risk of death from <u>all causes</u> by 50 percent

| | 6mth | 7mths | 8 mths | 9mths | 10mths (depart) | |
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| Polio | * | | | | | |
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| Chickenpox | | | | | | |
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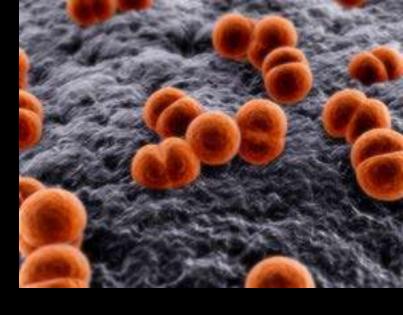






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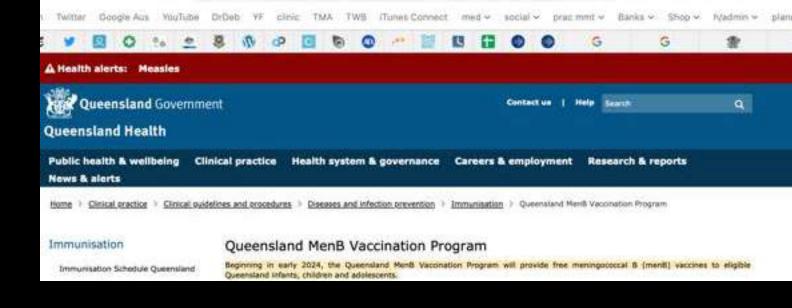
MENINGITIS ACWY



Extra Dose not funded

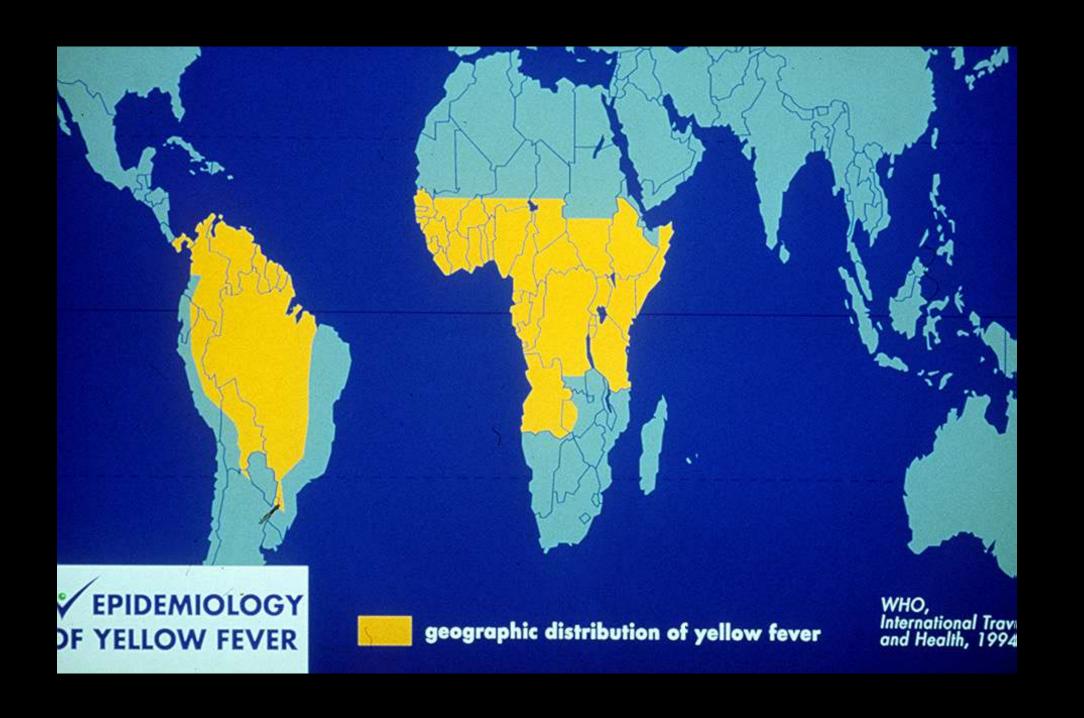
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FREE MEN B VACCINE



- (QLD) From early 2024
- Infants 6 weeks to 12 months
- Catch up to 2 years
- 15-19 years age

| | 6mth | 7mths | 8 mths | 9mths | 10mths (depart) | |
|-----------------|-----------|-----------|--------|-----------|-----------------|-------|
| Polio | * | | | | | |
| Tet/Dip/Pert | * | | | | | |
| MMR | | | | EXTRA MMR | | |
| Chickenpox | | | | | | |
| Influenza | Flu Child | Flu Child | | | | |
| Pneumonia | * | | | | | |
| Typhoid | | | | | | |
| Hepatitis A | | | | ?? | | |
| Hepatitis B | * | | | | | |
| Meningitis ACWY | | Men ACWY | | | | |
| Meningitis B | Men B | | ?? | Men B | | |
| Yellow Fever | | | | | | |
| Cholera | | | | | | |
| Jap B Enceph | | | | | C | 7 |
| Rabies | | | | | | |
| ТВ | | | | | | LE DE |
| | | | | | | |



VACCINES

- Required
- Routine
- Recommended

ETEC diarrhoea NNT 25



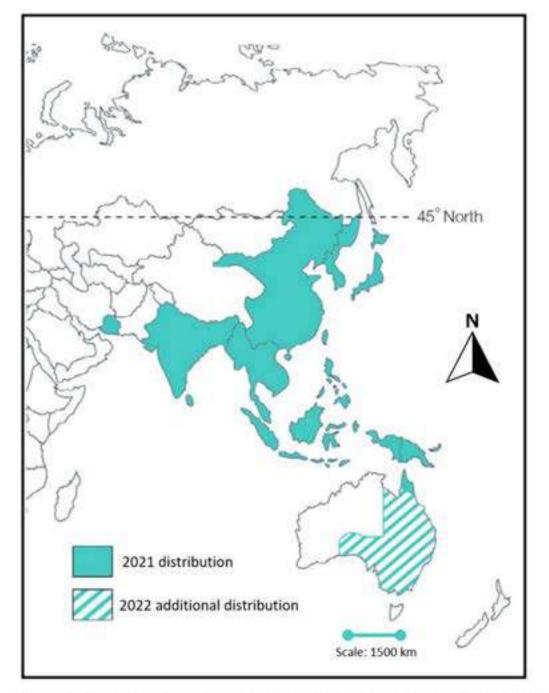
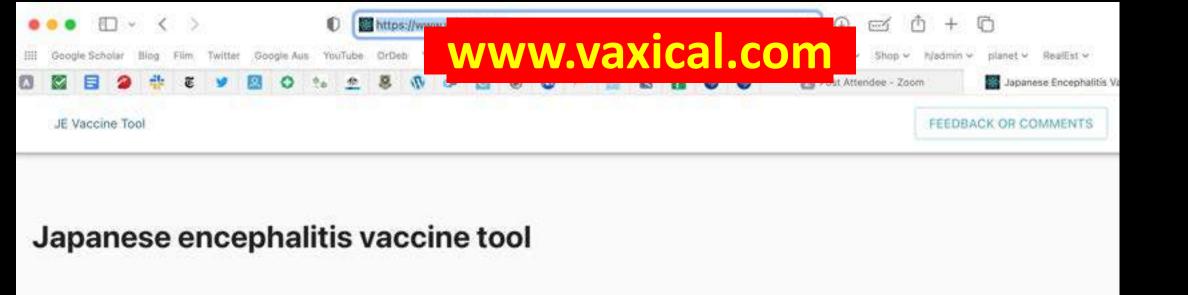
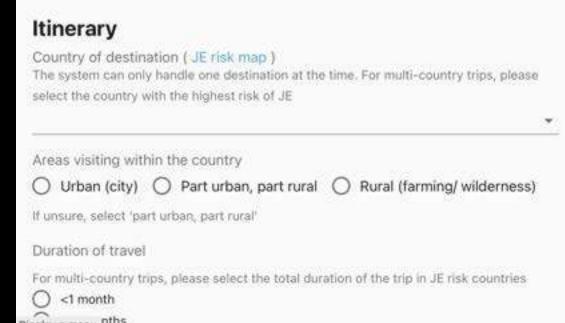


Figure 1. Japanese encephalitis virus is endemic throughout tropical and temperate areas of Asia,



Calculator Version
 Last updated on 19/07/2023.



Demographic characteristics

Sex

O Female O Male O Other

Age
O <5 years O 5-17 years O 18-60 years O >60 years

Do you have hypertension, diabetes mellitus, stroke, and/or renal disease?
O Yes O No

How often do you think you will use personal protective against mosquitoes (e.g., repellent)?

O Always O Sometimes (>50% of the time) O Seldom

| | 6mth | 7mths | 8 mths | 9mths | 10mths (depart) |
|-----------------|-----------|-----------|--------|---------------|-----------------|
| Polio | * | | | | |
| Tet/Dip/Pert | * | | | | |
| MMR | | | | EXTRA MMR | |
| Chickenpox | | | | | |
| Influenza | Flu Child | Flu Child | | | |
| Pneumonia | * | | | | |
| Typhoid | | | | | |
| Hepatitis A | | | | ?? | |
| Hepatitis B | * | | | | |
| Meningitis ACWY | | Men ACWY | | | |
| Meningitis B | Men B | | ?? | Men B | |
| Yellow Fever | | | | | |
| Cholera | | | | | |
| Jap B Enceph | | | | ?? JE Vaccine | CARE |
| Rabies | | | | | |
| ТВ | | | | | |

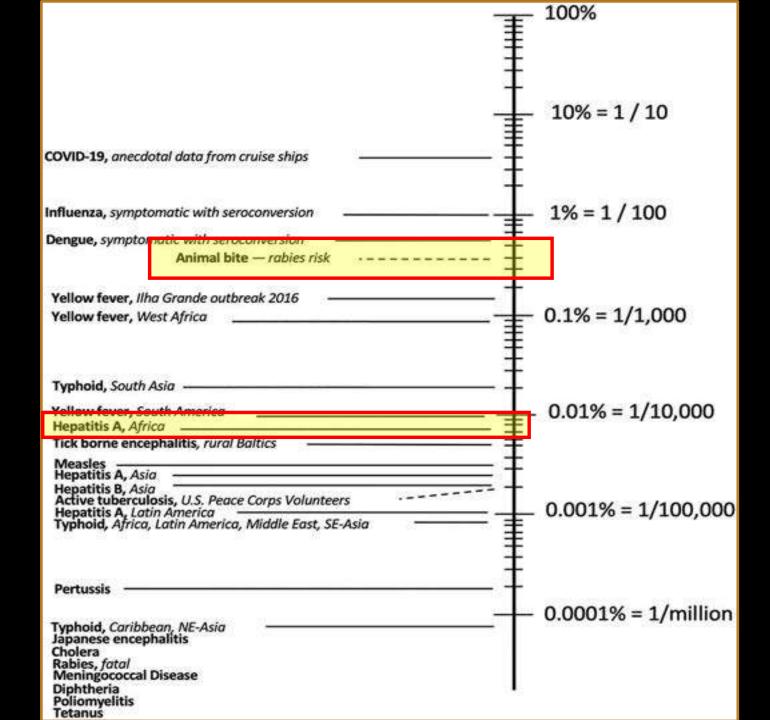


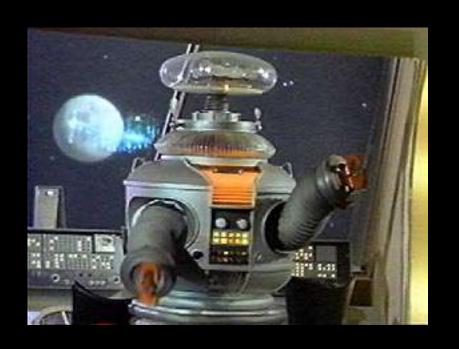
TBE



Figure 1 Incidence rate per month of VPDs in travellers; best estimate for non-immunes

J Travel Med, taad085, https://doi.org/10.1093/jtm/taad085



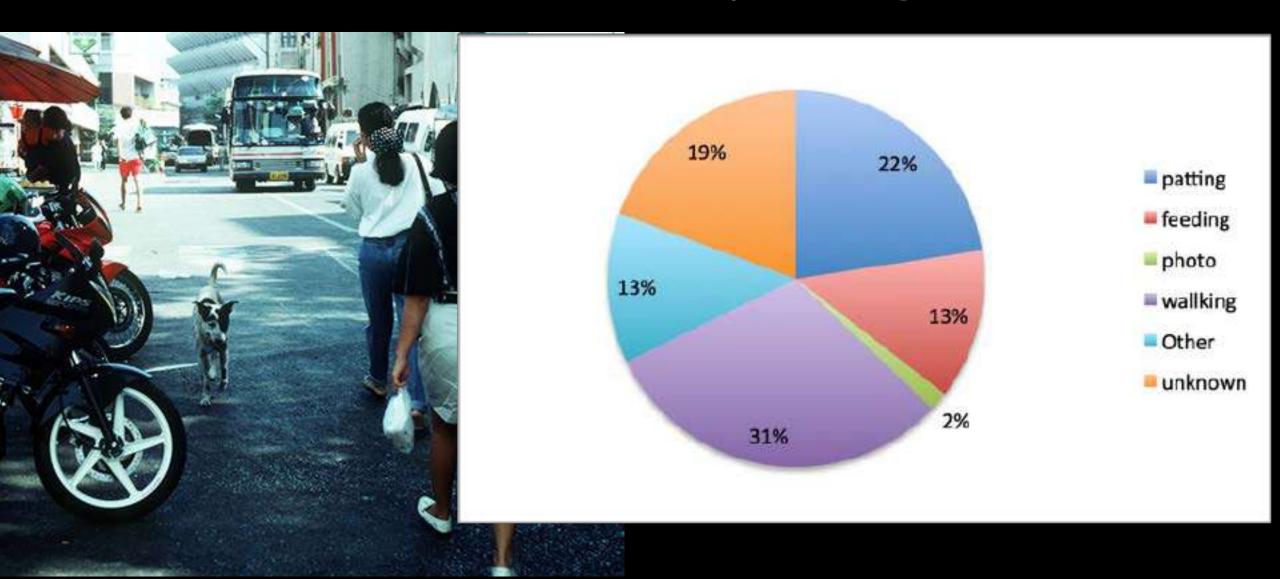


NOT PATTING DOGS

SHORT TRIPS

ARE NO GUARANTEE

Activity leading to bite?



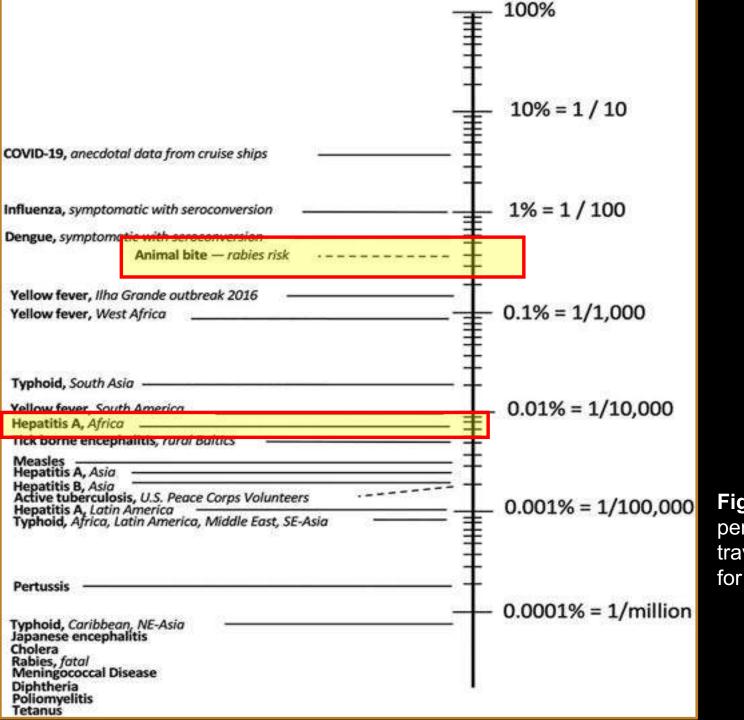
Is it time to rethink Bali's monkey forests?



Monkey forests are popular attractions for visitors to Bali, but without the usual flow of tourists the animals are getting hungry and bored [Supplied/Al Jazeera]

Tourists bitten - dogs and monkeys







J Travel Med, taad085, https://doi.org/10.1093/jtm/taad085 Emerg Infect Dis. 2002 Aug; 8(8): 789-795.

doi: 10.3201/eid0808.010467

PMCID: PMC3266706

PMID: 12141963

Human Exposure to Herpesvirus B-Seropositive Macaques, Bali, Indonesia

Gregory A. Engel, Lisa Jones-Engel, Michael A. Schillaci, Komang Gde Suaryana, Artha Putra, Agustin Fuentes, and Richard Henkel Agustin Fuentes, and Richard Henkel State of the State of

▶ Author information ▶ Copyright and License information PMC Disclaimer

- Sangey forest Bali
- 81% of the 38 sampled macaques tested positive for antibodies -all 28 adults (100%) were seropositive
- Workers 51/105 bitten or scratched 94% when holding food

Monkey forest

- Keep away
- Don't feed the monkeys
- Rabies vaccination is extremely unpleasant
- Herpesvirus B (Cercopithecine herpesvirus 1) is a worry

| | 6mth | 7mths | 8 mths | 9mths | 10mths (depart) |
|-----------------|-----------|-----------|------------|---------------|-----------------|
| Polio | * | | | | |
| Tet/Dip/Pert | * | | | | |
| MMR | | | | EXTRA MMR | |
| Chickenpox | | | | | |
| Influenza | Flu Child | Flu Child | | | |
| Pneumonia | * | | | | |
| Typhoid | | | | | |
| Hepatitis A | | | | ?? | |
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| Meningitis ACWY | | Men ACWY | | | |
| Meningitis B | Men B | | ; ; | Men B | |
| Yellow Fever | | | | | |
| Cholera | | | | | |
| Jap B Enceph | | | | ?? JE Vaccine | CARE |
| Rabies | | | | | CARE |
| ТВ | | | | | |
| | | | | | |

Q FEVER

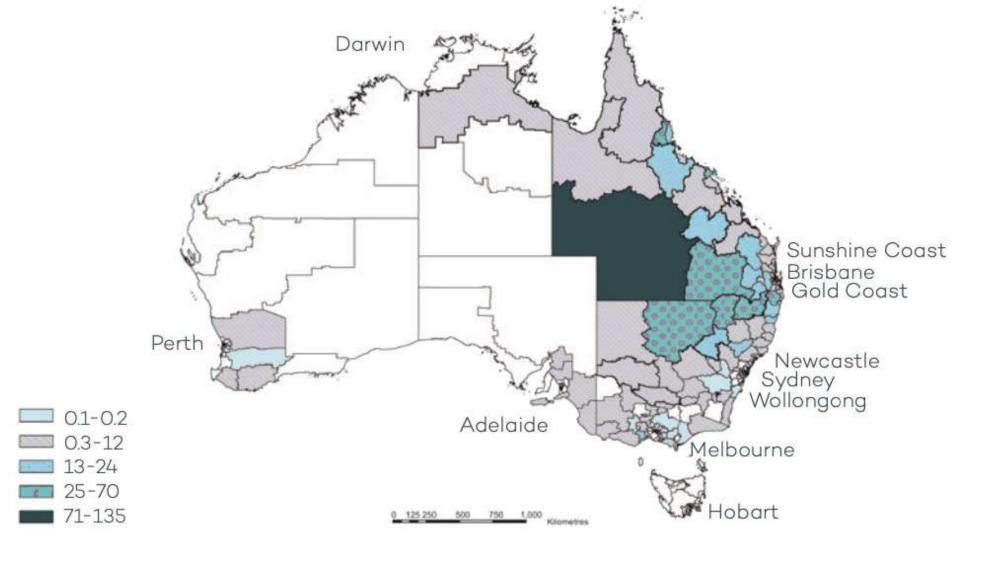


Figure 1: Notification rate for Q Fever, Australia, 2015 (cases per 100,000 population) by geographic areas.^{2,3,#}

#Geographical areas defined by Australian Bureau of Statistics (ABS) as Statistical Area Level 3 (population generally between 30,000 and 130,000)

Acute Q fever risk factors: Meat & livestock Abattoir workers and others associated with the meat industry Farm workers Shearers Stockyard workers Livestock transport workers Tanning and hide workers Veterinarians, veterinary staff and veterinary nurses and students Animal carers Wildlife carers, hunters, zoo keepers (working with high risk animals) Animal breeders and anyone regularly exposed to parturient animals Staff in veterinary microbiology laboratories Maintenance engineers, electricians, plumbers etc in at-risk environments. Environmental Visitors to at-risk environments e.g. research workers, teachers, school students, insurance agents, sales people etc, especially in rural communities People with indirect contact to livestock e.g. those living down-wind of livestock transport routes, processing plants, feedlots and abattoirs People involved in rural mowing due to aerosolised dust potentially contaminated with infected animal excreta, especially kangaroos and bandicoots Family members of the at-risk occupational groups through exposure to contaminated clothing, boots or equipment



Figure 2: Q Fever outbreaks across the world, in time and place (personal synthesis).

H G, N A, Djaballah A S, H L, A S, S T, et al. Between Livestock's and Humans, Q Fever Disease is Emerging at Low Noise. Act Scie Micro. 2019 Sep 20;2(10):104–32.

Tuberculosis

leading infectious disease killer in the world

- 2 billion persons infected
- 10 million become ill each year
- 1.5 million die

MULTIDRUG RESISTANT TB

Without intervention ..

people dying
from drug-resistant TB
Will double every 5 years

BCG policy by Country

The severity of national TB epidemics, in terms of the number of incident TB cases per 100 000 population per year, v widely among countries (Fig. 2.1.3). In 2021, countries with the highest rates were mostly in the WHO African Region.

Fig. 2.1.3 Estimated TB incidence rates, 2021



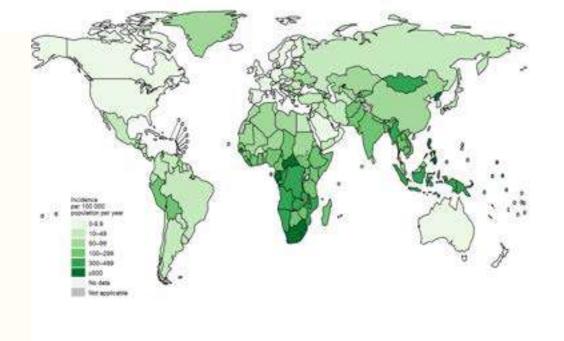


Figure 2

Map displaying BCG vaccination policy by country.

A: The country currently has universal BCG vaccination program. B: The country used to recommend BCG vaccination for

Ongoing cases



Journal of Travel Medicine, 2016, 1-6 doi: 10.1093/jtm/taw008 Review

Review

Tuberculosis and the traveller: evaluating and reducing risk through travel consultation

Justin T. Denholm 1,2,3 and Irani Thevarajan 3,4

¹Victorian Tuberculosis Program, Melbourne Health, Melbourne, Victoria, Australia, ²Department of Microbiology and Immunology, University of Melbourne, Parkville, Victoria, Australia, ³Victorian Infectious Diseases Services, Royal Melbourne Hospital and Peter Doherty Institute for Infection and Immunity, Victoria, Australia and ⁴Nossal Institute for Global Public Health, University of Melbourne, Parkville, Victoria, Australia

*To whom correspondence should be addressed. Email: justin,denholm@mh.org.au

Accepted 5 February 2016

Abstract

Background: Although the last 10 years have seen a slow decline in global tuberculosis (TB) incidence, it remains one of the most significant infectious diseases worldwide, with an estimated 9.6 million new cases and 1.5 million deaths in 2014. The consequences of contracting TB can be significant for the individual, with extended treatment re-

complications of disc Methods: This review of risk, risk reduction ture combined with e Results: The global T resistant disease. The 100 000, while multid traveller risk are presilers is low, with rates evaluation is necessary for progression to ac Discussion: It is important

travellers, including a

quirements, risk of la

<1%
<pre>per
traveller year

ding evaluation relevant litera-

ters among the

sitive and drug eater than 800/ cent surveys of II, risk to traveldetailed travel are at high risk

cess up-to-date ement of TB in

Key words: Tuberculosis, latent, BUG vaccine, interferon-gamma release assay, tuberculin skin test

Table 1. Risk factors and associated relative risk for developing active tuberculosis disease following infection

| Risk factor | Relative risk |
|--|---------------|
| Cigarette smoking ²⁵ | 2 |
| Current corticosteroid use ^{26a} | 2.76 |
| Diabetes ²² | 3.11 |
| TNFa inhibitor therapy ^{27,28} | 4–9 |
| Age <5 years old | 5 |
| Chronic renal failure on haemodialysis ²⁹ | 7.6 |
| HIV infection ³⁰ | 60 |

^aAny current daily oral steroid use.

Australian Immunisation handbook

- AGE --? Under age 5
- INCIDENCE AT DESTINATION--? 40/100,000
- DURATION OF TRAVEL --? more than 3 months
- PROXIMITY OF CONTACT -- ? Grandma with TB

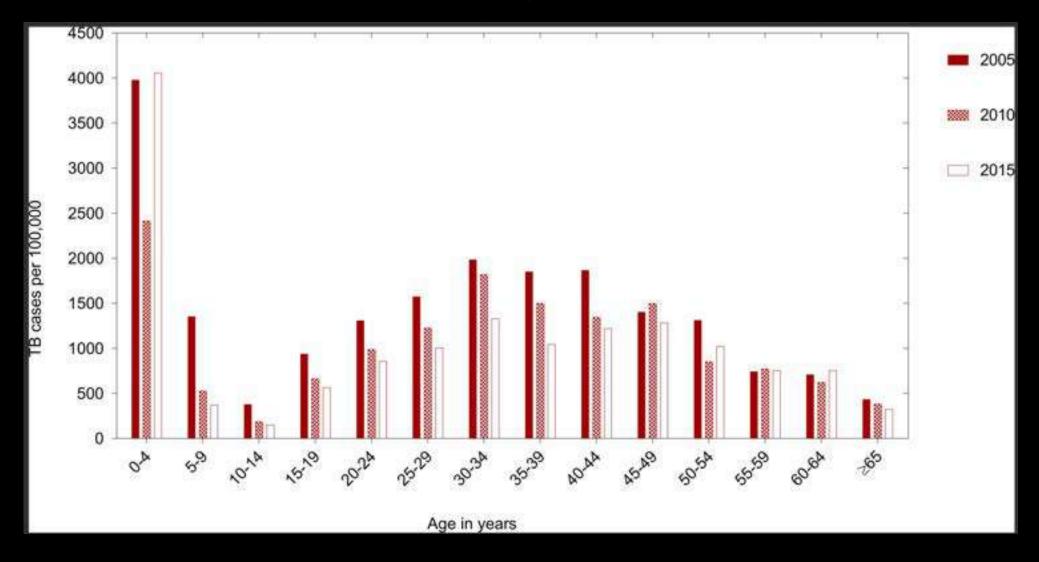
Different agent of peach insenting to observations with tagit intervaluable transference (will assess per 1950/01) opposition per years) are an exempted risk of acquisiting to believe and developing determined database. PACSI selective for result of the best all principling animon submissions) smilling to determine and inclinativation framinglish to children. Sale submissions and focus or children.

District should ideally receive the security of least I manufactarish patter departure to a Sight included retrieved Consider discussing Shales travel plane with parents and cares of money returns at the national acceptance age.

The risk execument about take account of the following:

- 1. the staffs age
- Not king that are in the light risk area the larger the exposure the ligher that has of relation.
- the processing of contact to latters staging with chemis or family counters at the community company the rais of orbit last, personally if they have a facility of count of behaviours.
- the tubercolosis incidence or the lessmooth

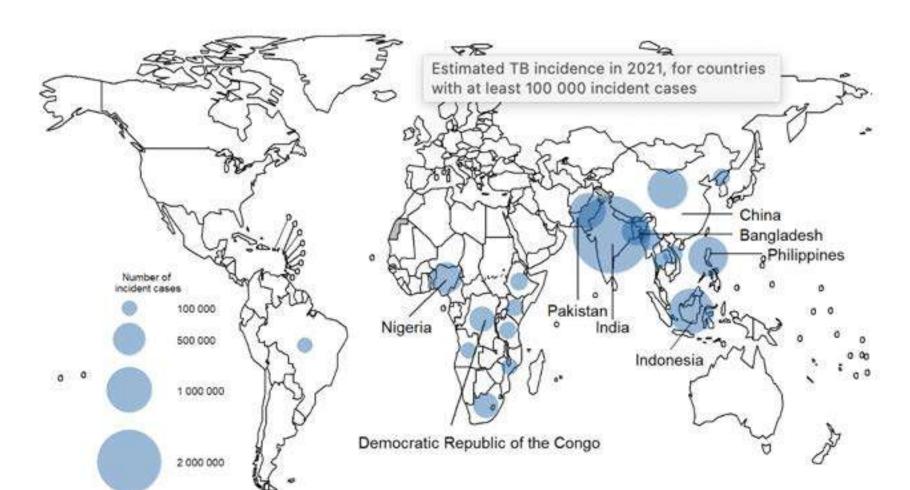
AGE



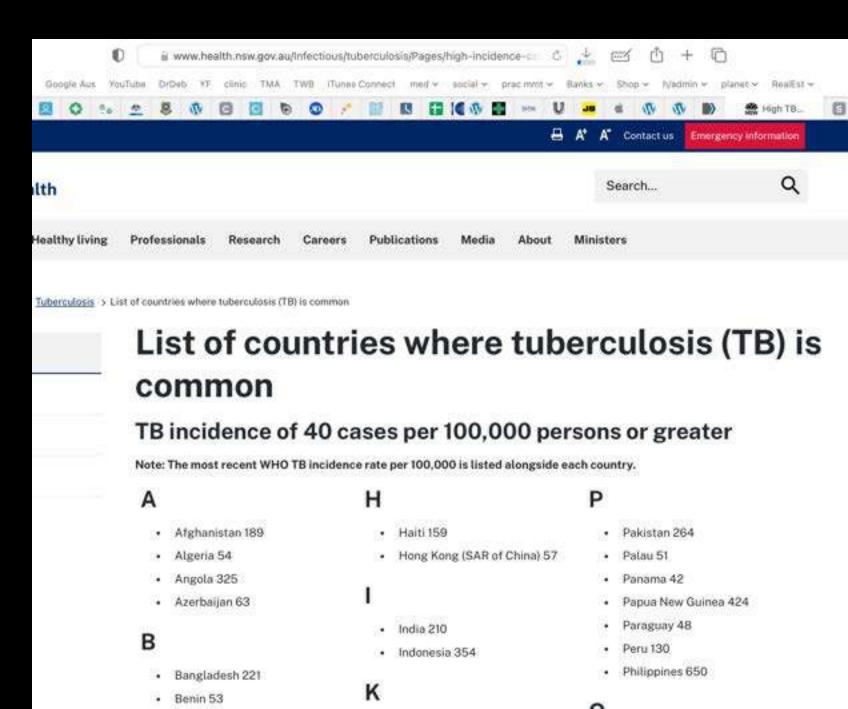
INCIDENCE AT DESTINATION?

Fig. 2.1.2 Estimated TB incidence in 2021, for countries with at least 100 000 incident cases

The eight countries that rank first to eighth in terms of numbers of cases, and that accounted for two thirds of global cases in 2021, are labelled.

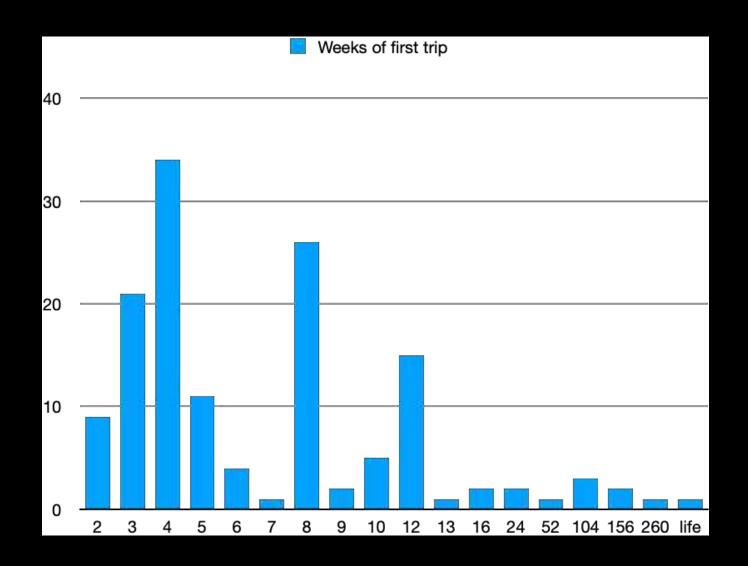


NSW HEALTH WEBSITE LIST



DURATION OF TRAVEL

• Expected duration of 'first trip' for this group of 143



80% FIRST TRIPS were UNDER 3 months

HISTORY

- AGE care with other live vaccines
- Medical problems so far/ Medication / Allergies / sick or feverish today
- Out of Australia yet
- Leaving when
- Visitors with potential TB?
- More trips to the same area before the child is 5 years of age

< 6 months age

???
immunosuppression
in mother
TNF inhibitors etc

JOURNAL ARTICLE

Case Report: Fatal case of disseminated BCG infection in an infant born to a mother taking infliximab for Crohn's Disease

Kuldeep Cheent, Jonathan Nolan, Sohail Shariq, Liina Kiho, Arabinda Pal, Jayantha Arnold 🔀

Journal of Crohn's and Colitis, Volume 4, Issue 5, November 2010, Pages 603-605,

https://doi.org/10.1016/j.crohns.2010.05.001

Published: 01 November 2010 Article history ▼



II Split View



Permissions



Abstract

We present the case of a 28 year old lady with refractory Crohn's Disease treated with infliximab throughout her pregnancy. Her baby was born healthy and received a Bacillus Calmette-Guérin (BCG) vaccine aged 3 months. Soon

HISTORY

- AGE care with other live vaccines
- Medical problems so far/ Medication / Allergies / sick or feverish today
- Out of Australia yet
- Leaving when
- Visitors with potential TB?
- More trips to the same area before the child is 5 years of age

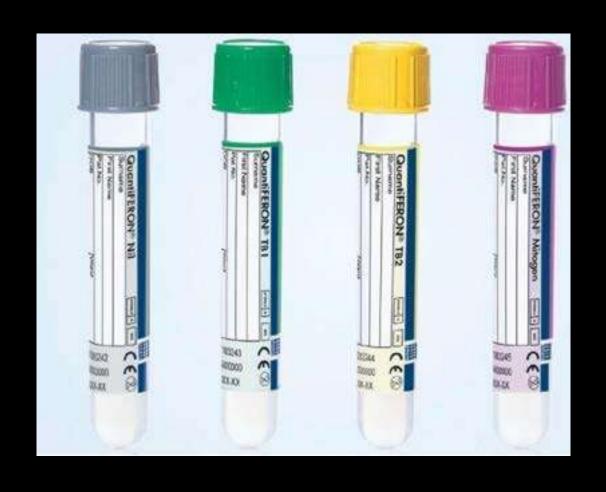
< 6 mths age ...biological mother ... immunosuppression???

Mantoux

- CDC suggests better in children < 5 yrs
- No blood test
- Cheaper
- Better guide if going to do a BCG??

QuantiFERON 2001 approved FDA

- Sensitised white cells release
 Gamma Interferon on exposure
 to TB antigen
- measures the level of IFN-g
- Limited data children under 5yo
- ~92 % accuracy
- specific to human TB
- One visit



CARE of BCG

- No fever
- Takes 1-8 weeks to appear
 - Keep it mostly dry
 - No bandaids
 - Don't pick or scratch
- 3 months to be effective
- No vaccines in left arm until healed
- Avoid live vaccines one month before and after

Effects of BCG

I

Caring for the BCG (Tuberculosis vaccine) site

the use a Non-Australia. Registered Vaccine: Toccine is manufactured by the AF MACEINES DENMARK. It is secretared by the World Realth Organization, General and used in time Institute AND good across Australia.

This various does NOT cours a fever. Pseudol is usually not needed,

BCG recoverants as white 'bubbbe', which will deappear within as hour.

The purpose areasty starts between 1-8 works after the vancination

The pushdo usually states as a small and lump. This grows and may swell to contain fluid or even pas at blood. A crust or a scale may Sara, eventually the mark will detach, and may release fluid or a par-like discharge. Eventually, it entitles to a real mark, which fades slowly to a send user. The spot can take 6 to 9 months to fally basil. Very turely a beep will appear in the ample of the vaccinated arm. Avoid getting the sear combinated, Photos are at swee theterophylogenerous article-various.

Sometimes only a small red spot is present at the naccine site, or nothing happens at all: the naccine will still be effective.

BCG takes about I months to be fully effective then is valid for Mr.

CARE INSTRUCTIONS - When there is a pentale;

Keep it mostly day. Both or shares so normal. If wissening get out of the water after 16 minutes. Dry the puntule by gentle parting, (do not rob) and then expose it to the six.

NEVER cover the pastale with a <u>bandajd</u>, plaster or dressing. Cover with a <u>bases obers only</u>; (Scratching through the storce is selfs). Avoid tight on itchy storces such as woollen jumpers. Food as

IMPORTANT: Leave do not of the BCU purish about. Never pick, servick, upoesse or serub the postule. This may increase the point, time to healing, risk of infection and size of som. Use tissue or option half to deb any once or fluid dispose in number orbitot. Do not apply cream or monitorare on the pushful. A small amount of body oil in the bath is sain. Advise complying to avoid holding the bafform part of the arm. With correct care, the BCU vaccination site will not usually cause pain. Dut can be normal.

Avoid vaccines in left arm until protole has fully healed.

Avaid LIVE vacciore (Routine 12 & 18 month vaccines) for a month before or after BCG.

Please settly one of the orderes expands to more than the size of a SNs proce, if the arrigat becomes non-or develops overlangs, or of none-textus none develop arround the vaccine area, or if it takes > 9 months to bank.

This vaccine will take I months to take offer: 18 (looker 1925)

If you wish a photo review, plouse and child's name and data of birth and data of BCG to although the relative years as

or if argum: call or text De Data Mills: -mobile to 0408 199166-



UNUSUAL6.5 months



Kawasaki disease

Positive predictive value of BCG site induration is 90%

Early diagnosis prevents cardiac side effects

• Loh A, Kua P, Tan Z. Erythema and induration of the Bacillus Calmette-Guérin site for diagnosing Kawasaki disease. Singapore Medical Journal. July 2018. doi:10.11622/smedj.2018084

| | 6mth | 7mths | 8 mths | 9mths | 10mths (depart) |
|-----------------|-----------|-----------|--------|---------------|-----------------------|
| Polio | * | | | | |
| Tet/Dip/Pert | * | | | | |
| MMR | | | | EXTRA MMR | |
| Chickenpox | | | | | |
| nfluenza | Flu Child | Flu Child | | | |
| Pneumonia | * | | | | |
| Гурhoid | | | | | Company of the second |
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| Yellow Fever | | | | | |
| Cholera | | | | | |
| lap B Enceph | | | | ?? JE Vaccine | CARE |
| Rabies | | | | | CARE |
| ГВ | | BCG | | | |
| | | | | | |



Scheduling

Live vaccines together or 1mth apart Course Fill in rest

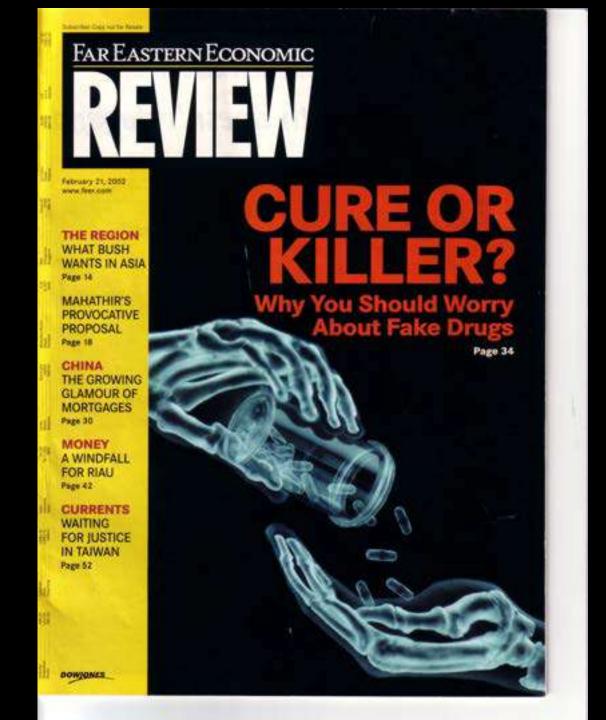


Scheduling

If the recommended intervals between doses are exceeded, there is no need to recommence the schedule or give additional doses, because the immune response is not impaired by such delay.

• The Australia Immunisation Handbook 6th Edition p 48

Fake Drugs



Travellers Medical Kit



Other Healthy Travel Advice

- Malaria/ Dengue/ Zika etc
- Encourage pre travel fitness
- Motor vehicle injuries (half are pedestrians)
- Local parasites
- Healthy eating/ ciguatera
- Sexually transmitted disease advice
- DVT
- Altitude sickness



Resources for travellers





My suggestion .. Who to refer..??

- Special vaccines
 - -Yellow Fever/JE / TBE / Rabies/ BCG/Q Fever / Dengue
- Unusual/unfamiliar destinations
- Complicated itineraries
- Long term expats esp with young children
- Pre-existing illness especially if unstable e.g HIV
- Pregnant travellers esp. to malarious areas