

SCUOLA DI SPECIALIZZAZIONE IN MALATTIE INFETTIVE E TROPICALI

PANDORA

ID - 25

TIME TO WEBINAR IN INFECTIOUS DISEASES

Medicina dei Viaggi e vaccinazioni internazionali nell'ospite immunodepresso

Andrea Rossanese MD, PhD
DTM(Glasg), FISTM, FFTM RCPS(Glasg), IDEWM, FAWM

Dept of Infectious-Tropical Diseases & Microbiology
IRCCS «Sacro Cuore-Don Calabria»
Negrar di Valpolicella, Verona, Italy



1



OBIETTIVI

IMM-COMPR



1. Review medical considerations for the immune compromised traveler.



2. Identify pre-travel factors to consider when assessing travel itineraries in the immune compromised traveler



3. Discuss concerns related to vaccine selection in the immunocompromised traveler



2



CHI È IMM-DEPR

IMM-COMPR

- Active treatment for solid tumor and hematologic malignancies
- Receipt of solid-organ transplant and taking immunosuppressive therapy
- Receipt of CAR-T-cell or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy)
- Moderate or severe primary immunodeficiency (e.g., DiGeorge syndrome, Wiskott-Aldrich syndrome)
- Advanced or untreated HIV infection
- Active treatment with high-dose corticosteroids (i.e., ≥ 20 mg prednisone or equivalent per day), alkylating agents, antimetabolites, transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, tumor-necrosis (TNF) blockers, and other biologic agents that are immunosuppressive or immunomodulatory.

Factors to consider in assessing the general level of immune competence in a patient include disease severity, duration, clinical stability, complications, comorbidities, and any potentially immune-suppressing treatment.

<https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>

3



CHI NON È IMM-DEPR

IMM-COMPR

Health condition or treatment	Circumstances under which no specialized precautions are required (limited immune deficits)
Cancer history	Received last chemotherapy treatment ≥ 3 months previously and malignancy in remission
Corticosteroid treatments	Short- or long-term daily or alternate-day therapy with < 20 mg of prednisone or equivalent Maintenance steroids at physiologic doses (replacement therapy) Steroid inhalers or topical steroids (i.e., skin, ears, or eyes) Intraarticular, bursal, or tendon steroid injections > 1 month since high-dose (≥ 20 mg/day of prednisone or equivalent for ≥ 2 weeks) steroid use ¹
Hematopoietic stem cell transplant recipients or CAR-T cell recipients	Meets all criteria: > 2 years post-transplant; not on immunosuppressive drugs; no evidence of ongoing malignancy; and without graft-versus-host disease
Multiple sclerosis or autoimmune disease (e.g., inflammatory bowel disease, rheumatoid arthritis, systemic lupus erythematosus)	Not receiving immunosuppressive or immunomodulatory drug therapy, although definitive data are lacking

<https://wwwnc.cdc.gov/travel/yellowbook/2024/additional-considerations/immunocompromised-travelers>

4



DIAGNOSI AL RIENTRO

IMM-COMPR

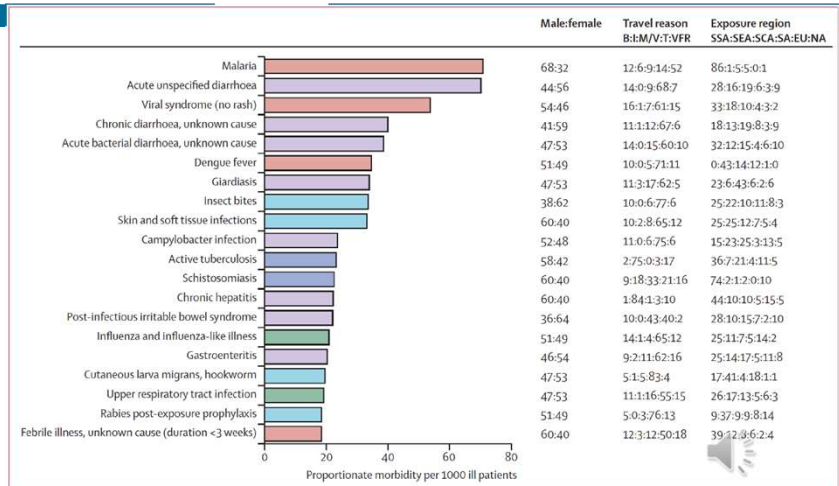


Figure 2: Top diagnoses in all ill travellers presenting to EuroTravNet clinics (N=32136) in 2008-12

Colours: red bars are febrile illness, purple bars are gastrointestinal tract illness, light blue bars are dermatological illness, green bars are respiratory illness, and dark blue bars are infection attributable to more than one syndromic category. Travel reasons: B=business, I=immigration, M/V=missionary/volunteer, T=tourism, VFR=visiting friends and relatives. Exposure regions: SSA=sub-Saharan Africa, SEA=southeast Asia, SCA=southcentral Asia, SA=south America, EU=Europe, NA=north Africa.

Schlagenhauf P, Weld L, Goorhuis A, et al. Lancet Infect Dis. 2015;15:55-64

5



TIPO E DURATA DEL VIAGGIO

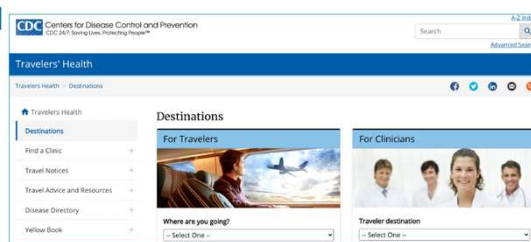
IMM-COMPR

Visiting Friends and Relatives (VFR),
“roughing it” – higher risk for infection vs
business, high end travel

The longer the duration, the higher the risk

All immunocompromised patients traveling
outside of Europe, North America,
Australia/New Zealand, Caribbean resorts
would best be seen in Travel Medicine Clinic

CDC website «[Destinations](#)» and Travel
Health Pro website «[Country Information](#)»
are excellent resources for both travellers
and clinicians; highlight local outbreaks



<https://wwwnc.cdc.gov/travel/destinations/list>



6



TIMING IS KEY IN OPTIMISING RISK

IMM-COMPR

Should be >1 year after organ transplant, > 2 years after stem cell transplant, no recent complications, on lower immunosuppression

Good/manageable decisions

Liver transplant recipient, stable x 3 years, going to Uganda x 6 months to visit family, will get labs every month and email to team at home, has enough meds, plan for rapid return to Italy if ill.

Kidney transplant recipient now 2 years out from transplant, stable kidney function, low dose immunosuppression, wishes to deploy to Iraq for 6 months. Has plan if ill in country.

Less good decisions

Returning home/VFR to Morocco after renal transplant 4 months ago, one episode of rejection, getting monthly belatacept infusion, will fly back every month for infusion. No healthcare available to her there.

Professor at University institution also working in rustic South America, new diagnosis of ANCA+ vasculitis, recent high dose prednisone and rituximab, clinical course actively evolving, wishes to return to S. America for prolonged trip.

Kotton, Kroger, Freedman, Immunocompromised Travelers, CDC Yellow Book 2024
<https://www.cdc.gov/travel/yellowbook/2024/additional-considerations/immunocompromised-travelers>

7



EDUCAZIONE: PUNTI CHIAVE

IMM-COMPR

Develop plan in case of illness at destination (clinic or hospital that would be able to care for immunocompromised host; how to use embassy resources and medical evacuation insurance).

Augmented risk of infection with endemic or multidrug-resistant organisms during and after travel

Highlight such travel to clinicians if ill afterwards

Vigilant use of sun protection given dramatically elevated rates of skin cancer in immunocompromised hosts, also higher risk of photosensitivity from medications.

Mosquito, tick precautions; clean swimming (chlorine!); avoid walking barefoot

Vigilant food and water precautions, alcohol-based hand sanitizer

Bring travel health/first aid kit

Safer sex

Blood product/needle safety

Epidemiol. Infect., Page 1 of 4. © Cambridge University Press 2014
doi:10.1017/S0950268814002842

SHORT REPORT

Balamuthia mandrillaris therapeutic mud bath in Jamaica

Kotton, Kroger, Freedman, Immunocompromised Travelers, CDC Yellow Book 2024
<https://www.cdc.gov/travel/yellowbook/2024/additional-considerations/immunocompromised-travelers>

8



EDUCAZIONE: I FARMACI

IMM-COMPR

Discuss insurance coverage for medications well in advance of trip

Bring list and *extra medications* in case of travel delays, in carry-on bag. Insurance does not always cover more than a month at a time. It can take a while and a good amount of work to get insurance to cover extra months of medications.

Ensure medications are labeled/in original containers (no filled pill boxes)

Prepare for possible prolonged no refrigeration

Avoid taking medications purchased at destination

Be wary - substandard, spurious, falsely labeled, falsified, and counterfeit medicines

Drug interactions/QT interval prolongation awareness

Consider starting in advance of trip and check that levels are stable before travel

Bring antibiotics for self treatment of infection...



9



ANTIBIOTICI

IMM-COMPR

Consider prior infection history

UTI, cellulitis, cholangitis

Bacterial resistance profile

Allergies

Consider infections at destination

i.e. Self treatment of malaria, influenza (oseltamivir), COVID-19

Consider resistance issues at destination

i.e. Rx for Fosfomycin for UTI

Bactrim/doxycycline for MRSA

Be generous and give careful instructions as to when/how to use



10



PROFILASSI MALARIA

IMM-COMPR

- Recommend enhanced mosquito and bug precautions
- Use standard guidelines to determine need and issue regarding local resistance
- Specific comments on agents:
 - **Doxycycline** could potentiate photosensitivity reactions depending on other drugs in regimen
 - **Mefloquine** plus other agents that potentiate CNS side effects could be disastrous in a foreign land
 - **Atovaquone/proguanil** preferred

11



IMM-COMPR

TABLE 4 Travel-related medications, adult dosages, and duration

	Dose	Duration	Change for reduced GFR	Change for hepatic dysfunction
Travelers' diarrhea treatment				
Ciprofloxacin	500 mg bid	For 3-7 d	Yes	No
Levofloxacin	500 mg daily	For 3-7 d	Yes	No
Azithromycin	500 mg daily	For 3-7 d	Use caution if CrCl <10 mL/min	No
Malaria prophylaxis ⁶⁹				
Atovaquone-proguanil	Atovaquone/proguanil 250 mg/100 mg daily	Start 1-2 d prior to entering a malaria-endemic area, continue throughout the stay and for 7 d after leaving malarial area	No dose adjustment for mild-to-moderate renal impairment; avoid if severe renal impairment (CrCl <30 mL/min)	No dosage adjustment required in mild-to-moderate hepatic impairment. No data for use in severe hepatic impairment
Mefloquine	250 mg weekly	Begin 2 wk before, arrival in endemic area, continuing weekly during travel and for 4 wk after leaving malarial area	No	Half-life may be prolonged, and plasma levels may be higher
Doxycycline	100 mg daily	Start 1-2 d prior to entering a malaria-endemic area, continue throughout the stay and for 28 d after leaving malarial area	No	No
Chloroquine	500 mg/wk (300 mg base)	Begin 1-2 wk prior to exposure; continue for 4 wk after leaving malarial area	Administer 50% of dose if CrCl <10 mL/min	No
Hydroxychloroquine	400 mg/wk	Begin 1-2 wk prior to exposure; continue for 4 wk after leaving malarial area	No, but may need to consider reduction	No
Primaquine	52.6 mg/daily (30 mg base)	Begin 1-2 d before exposure; continue for 7 d after leaving malarial area	No	No
Altitude sickness prophylaxis				
Acetazolamide	125-250 mg bid	Begin 2 d before ascending and continue until 2 d after completing ascent	Yes	No

From Travel Medicine and Transplant Tourism in Solid Organ Transplantation, CN Kotton, A Buchan and the AST ID Community of Practice, Clinical Transplantation: The American Society of Transplantation Infectious Diseases Guidelines 4th Edition, 2019

Adapted from Chapter 3 "Malaria" in Centers for Disease Control's Yellow Book⁶⁹ and Lexi-Comp[®] Lexi-Drugs.

12

TABLE 5 Interactions between transplant and travel-related medications			
	Calcineurin inhibitors (CNI): tacrolimus, cyclosporine	mTOR inhibitors: sirolimus, everolimus	Trimethoprim-Sulfamethoxazole (Septra, Bactrim)
Travelers' diarrhea treatment			
Ciprofloxacin	May cause QT prolongation when used in combination May ↑ CNI levels (cyclosporine)		May increase risk of hypoglycemia
Levofloxacin	May cause QT prolongation when used in combination May ↑ CNI levels (cyclosporine)		May increase risk of hypoglycemia
Azithromycin	May ↑ CNI levels	May ↑ levels	
Malaria prophylaxis			
Atovaquone-proguanil	No significant interactions		
Doxycycline	No significant interactions		
Chloroquine	May ↑ cyclosporine levels Can interact with tacrolimus to prolong QT	Everolimus may increase chloroquine levels	May increase risk of hypoglycemia
Hydroxychloroquine	May ↑ cyclosporine levels		May increase risk of hypoglycemia
Mefloquine	Can interact with tacrolimus to prolong QT	Everolimus may increase mefloquine levels	
Primaquine	May ↑ cyclosporine levels Can interact with tacrolimus to prolong QT		
Altitude sickness prophylaxis			
Acetazolamide	May ↑ cyclosporine levels		
Significant interactions of travel medicines and azathioprine, mycophenolate mofetil, and corticosteroids have not been reported; significant interactions of transplant medicines and diphenoxylate hydrochloride and atropine sulfate tablets or loperamide have not been reported; minimal data available. Adapted from MicroMedex® DrugReax® Interactive Drug Interactions and Lexi-Comp® Drug Interactions.			

13

KIT 1° SOCCORSO

IMM-COMPR

Additional Medications

Destination-related, if applicable:

- Antimalarial medications
- Medication to prevent high-altitude illness

Pain or fever:

- Acetaminophen, ASA, or Ibuprofen

Stomach upset or diarrhea:

- Over-the-counter antidiarrheal medication (loperamide [Imodium] or bismuth subsalicylate [Pepto-Bismol])
- Antibiotics for self-treatment of moderate to severe diarrhea & packets of oral rehydration salts
- Mild laxative, antacid

Throat and respiratory discomfort:

- Antihistamine, decongestant, alone or in combination with antihistamine, cough suppressant, throat lozenges

Anti-motion sickness medication

Epinephrine auto-injector if history of severe allergic reaction

Basic First Aid

Disposable gloves

Adhesive bandages, gauze, adhesive tape, antiseptic

Elastic bandage wrap, tweezers, scissors

Latex condoms

Antifungal and antibacterial ointments or creams

Anti-itch gel or cream for insect bites and stings

Aloe gel for sunburns

Moleskin for blisters - diabetic patients should be especially careful of foot injuries and should check their feet for early signs or irritation

Digital thermometer

First aid quick reference card

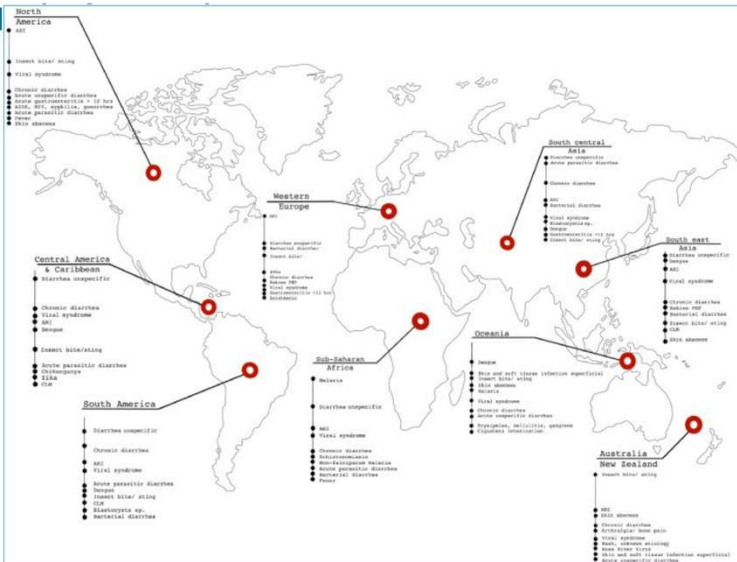
adapted from <https://wwwnc.cdc.gov/travel/yellowbook/2024/health-care-abroad/travel-health-kits>

14



LOCATION !!!

IMM-COMPR



Some
are
easier
than
others

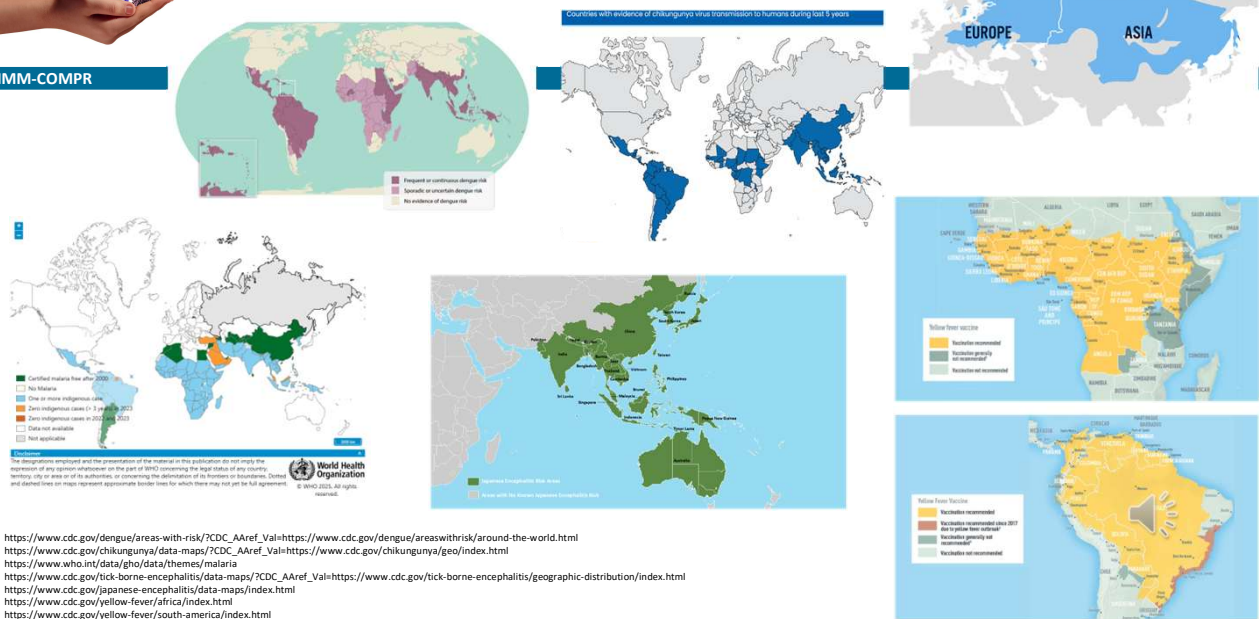


Grobisch M, et al. *Lancet Reg Health Eur*.2021;1:100001

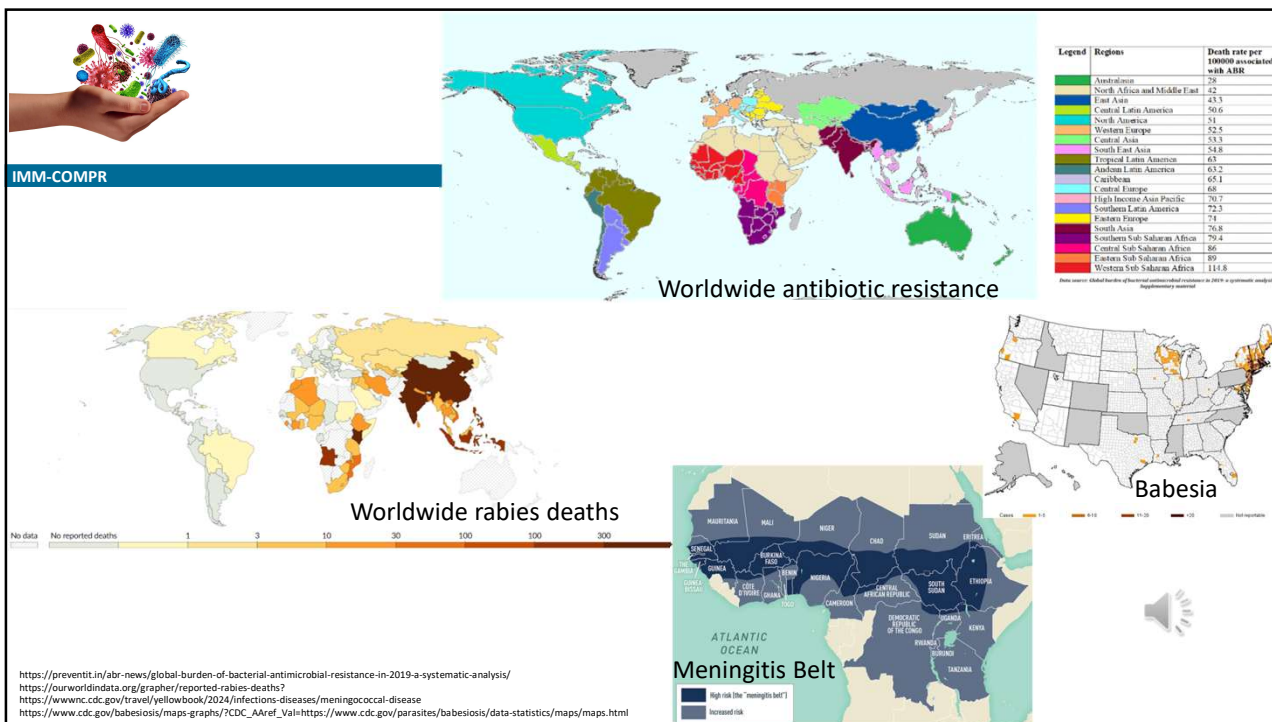
15



IMM-COMPR



16



17

IMM-COMPR

VACCINI DI ROUTINE

18

 Calendario di Immunizzazione per la Vita 2025 (Siti, SIP, FIMP, FIMMG, SIMG) (vedere testo per le raccomandazioni specifiche relative a ciascuna vaccinazione)														
Vaccino	2 mesi	3 mesi	4 mesi	5 mesi	6 mesi	10 mesi	12 mesi	13-14 mesi	5 anni	6 anni	11-18 anni	19-59 anni	50-64 anni	> 64 anni
DTPa	DTPa		DTPa			DTPa			DTPa		dTpaIPV	dTpa** (ogni 10 anni)		
IPV	IPV		IPV			IPV			IPV					
Epatite B	Ep. B		Ep. B			Ep. B								
Hib	Hib		Hib			Hib								
Pneumococco	PCV	(aggiuntiva) PCV*	PCV			PCV								PCV20 o PCV15/PPV
MPRV							MPRV		MPRV					
MPR							oppure MPR + V		oppure MPR + V					
Varicella														
Meningococco ACWY							Men ACWY				Men ACWY			
Meningococco B	Men B							Men B			Men B 2 dosi			
HPV											HPV: 2-3 dosi (in funzione dell'età)			
Influenza**						Influenza								Influenza
Herpes Zoster														HZ
Rotavirus		Rotavirus												
SARS-CoV-2**														SARS-CoV-2 ≥ 60 anni
VRS		Anticorpo monoclonale 0-12 mesi o Vaccino in gravidanza												Vaccino VRS ≥ 75 anni

Vaccini per i quali è fortemente raccomandata la cosomministrazione nella stessa seduta

* In caso di uso schedula 3+1 PCV20

** Vaccino fortemente raccomandato in gravidanza

19

 ADULTI ≥19, 2025 PER ETÀ				
Vaccine	19-26 years	27-49 years	50-64 years	≥65 years
COVID-19 (1)	1 or more doses of 2024-2025 vaccine (See Notes)			2 or more doses of 2024-2025 vaccine (See Notes)
Influenza inactivated (IIV3, cellV3) Influenza recombinant (RIV3) (1)	1 dose annually			1 dose annually (IIV3, RIV3, or cellV3 preferred)
Influenza inactivated (aIIV3, HD-IIV3) Influenza recombinant (RIV3) (1)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3) (1)	1 dose annually			
Respiratory Syncytial Virus (RSV) (1)	Seasonal administration during pregnancy. (See Notes)			65 through 74 years (See Notes) ≥75 years
Tetanus, diphtheria, acellular pertussis (Tdap or Td) (1)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (See Notes)			
Mumps, measles, rubella (MMR) (1)	1 or 2 doses depending on indication (if born in 1957 or later)			For health-care personnel, (See Notes)
Varicella (VAR) (1)	2 doses (if born in 1980 or later)			2 doses
Zoster recombinant (RZV) (1)	2 doses for immunocompromising conditions (See Notes)			2 doses
Human papillomavirus (HPV) (1)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23) (1)				See Notes
Hepatitis A (HepA) (1)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB) (1)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY) (1)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB) (1)	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)			
Haemophilus influenzae type b (Hib) (1)	19 through 23 years			
Moraxella (Morax) (1)	1 or 3 doses depending on indication			
Inactivated poliovirus (IPV) (1)	2 doses			
Inactivated poliovirus (IPV) (1)	Complete 3-dose series if incompletely vaccinated. Self-report of previous doses acceptable (See Notes)			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

https://www.cdc.gov/vaccines/hcp/imm-schedules/adult-age.html

20



ADULTI ≥19, 2025 PER CONDIZIONE

IMM-COMPR

Recommended vaccination for adults who meet age requirements, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.

No recommendation/ Not applicable

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.

Vaccine	Pregnancy	Immunocompromised (including HIV infection)	HIV infection CD4 percentage and count	Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease, alcoholism ^a	Diabetes	Health care Personnel ^b
COVID-19		See Notes								
Influenza inactivated Influenza recombinant		Solid organ transplant (See Notes)				1 dose annually				
MM2				1 dose annually if age 19–49 years						
RSV	Seasonal administration (See Notes)	See Notes			See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy			1 dose Tdap, then Td or Tdap booster every 10 yr						
MMR	*									
VAR	*	See Notes								
RZV		See Notes								
HPV	*	3-dose series if indicated								
Pneumococcal										
HeaA										
HeaB	See Notes								Age ≥ 60 years	
MenACWY										
MenB										
Hib		HSCT: 3 doses ^c			Asplenia: 1 dose					
Mmx	See Notes			See Notes						See Notes
HPV										Complete 3-dose series if incompletely vaccinated. Self-report of previous doses acceptable (See Notes)

<https://www.cdc.gov/vaccines/hcp/imm-schedules/adult-medical-condition.html>

21



IMM-COMPR

VACCINI PER IL VIAGGIO E VACCINI VIVI

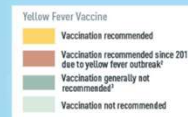
22



FEBBRE GIALLA

IMM-COMPR

Transplant and other immunocompromised patients should consider avoiding travel to yellow fever zones, shown here in yellow.



<https://wwwnc.cdc.gov/travel/yellowbook/2024/infectious-diseases/yellow-fever>

23



IMM-COMPR e YF

IMM-COMPR

Travelers with severe immune compromise should be strongly discouraged from travel to destinations that present a true risk for yellow fever (YF).

They should not undergo YF vaccination, as there is a risk of developing a serious adverse event, such as life-threatening yellow fever vaccine-associated viscerotropic disease.

If travel to an area where YF vaccine is recommended is unavoidable & the vaccine is not given, these travelers should:

- be informed of the risk of YF & carefully instructed in methods to avoid mosquito bites
- be provided w/ a vaccination medical waiver.

Patients with conditions that the Advisory Committee on Immunization Practices considers precautions to administration of YF vaccine, such as asymptomatic HIV may be offered YF vaccine if travel to YF-endemic areas is unavoidable; recipients should be monitored closely for possible adverse effects.

Data from clinical and epidemiologic studies are insufficient at this time to evaluate the actual risk of severe adverse effects associated with YF vaccine among recipients with limited immune deficits.



24



IMM-COMPR e YF

IMM-COMPR

“If international travel requirements, and not true exposure risk, are the only reasons to vaccinate a traveler with asymptomatic HIV-infection or a limited immune deficit, the physician should provide a waiver letter.

Travelers should be warned that vaccination waiver documents may not be accepted by some countries; if the waiver is rejected, the option of deportation might be preferable to receipt of YF vaccine at the destination.”

MEDICAL CONTRAINDICATION TO VACCINATION
Contre-indication médicale à la vaccination
 This is to certify that immunization against
 Je soussigné(e) certifie que la vaccination contre

Yellow fever
 (Name of disease - Nom de la maladie) for pour

(Name of traveler - Nom du voyageur) is medically
 est médicalement

contraindicated because of the following conditions:
 contre-indiqué(e) pour les raisons suivantes:

(Signature and address of physician)
 (Signature et adresse du médecin)

INTERNATIONAL CERTIFICATE OF VACCINATION OR PROPHYLAXIS
 AS APPROVED BY
THE WORLD HEALTH ORGANIZATION

CERTIFICAT INTERNATIONAL DE VACCINATION OU DE PROPHYLAXIE
 APPROUVÉ PAR
L'ORGANISATION MONDIALE DE LA SANTE

TRAVELER'S NAME-NOM DU VOYAGEUR

ADDRESS-ADRESSE (Number-Numéro) (Street-Rue)

(City-Ville)

(County-Département) (State-Pays)

DEPARTMENT OF HEALTH AND HUMAN SERVICES
 CENTERS FOR DISEASE CONTROL AND PREVENTION

CDC 731 (formerly PHS-731) CR113730

25



YEL-AVD

IMM-COMPR

Uncontrolled replication of vaccine virus

Multisystem organ dysfunction

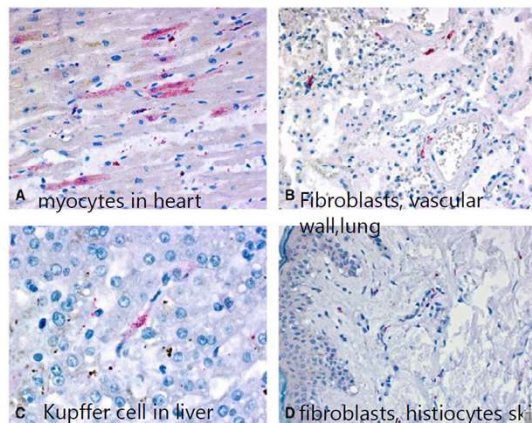
60% of reported cases are fatal¹

- vs severe YF disease 20-50%

Risk in USA: 0.4 cases per 100,000 doses²

- 1/100,000 in those ≥60yo, 2.3/100,000 ≥70yo³
- Risk in immunocompromised host higher, unknown risk

1. Gershman MD, Staples JE, Bentsi-Enchill AD, et al. Viscerotropic disease: case definition and guidelines for collection, analysis, and presentation of immunization safety data. *Vaccine* 2012;30:5038-58.
2. CDC. Yellow fever vaccine: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2010;59(No. RR-7).
3. Lindsey NP, Schroeder BA, Miller ER, et al. Adverse event reports following yellow fever vaccination. *Vaccine* 2008;26:6077-82.



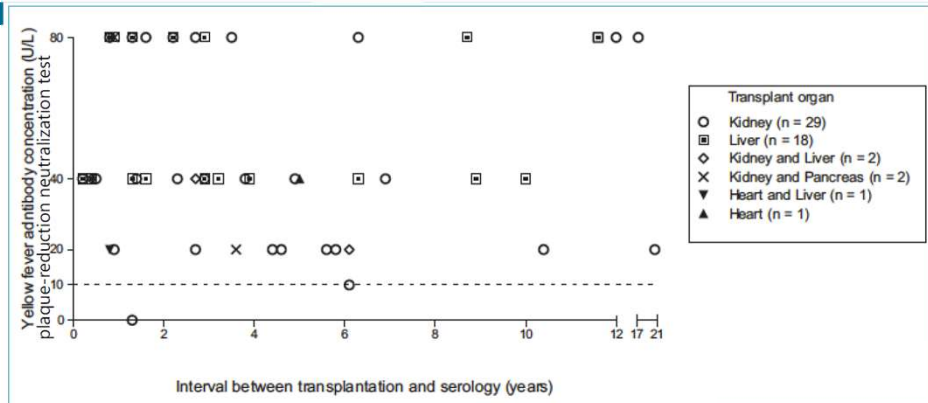
Yellow fever vaccine-associated viscerotropic disease
 (Yellow fever virus antigens (red), immunohistochemistry)
 MMWR / March 2015

26



PERSISTENZA Ab DOPO TRAPIANTO

IMM-COMPR



All but 1/53 (98%) had protective titers of antibodies after a median duration of 3 years (range, 0.8-21 years) after transplantation.

Yellow fever antibodies were still detectable after a median time of 13 years (range: 2-32) post-immunization (vaccine timing known, n=46).

Wyplosz B, Burdet C, François H, et al. *Am J Transplant* 2013;13:2458-61

27



IMMUNOGENICITÀ LONG TERM

IMM-COMPR

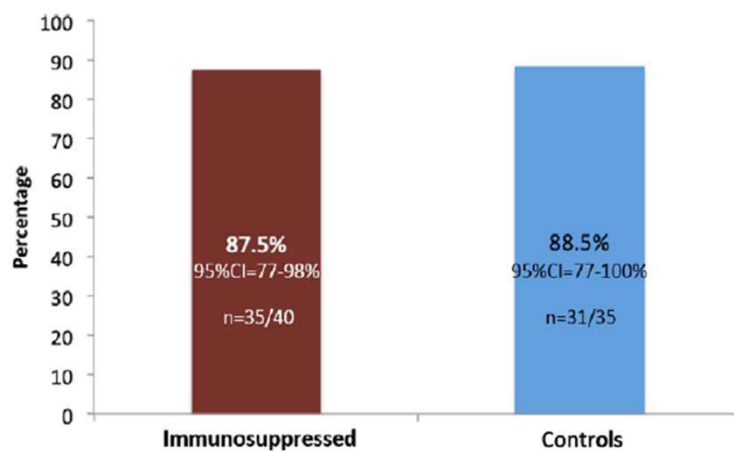


Fig. 2. Percentage of seropositivity in immunosuppressed patients and controls after a median of 21 years after the last YFV.

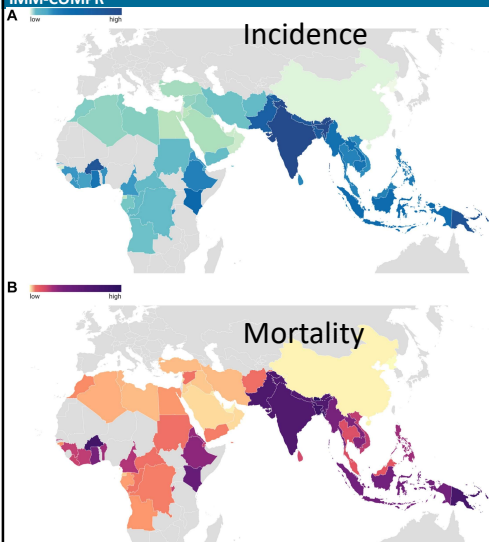
Burkhardt J, Ciurea A, Gabay C, et al. *Vaccine* 2020;38:3610-7

28



ANTI-TIFICA

IMM-COMPR



Pick parenteral vaccine (not the oral live, attenuated vaccine)
Efficacy unknown, likely quite diminished



Piovani D, Figlioli G, Nikolopoulos GK, et al. *eClinicalMedicine* vol 77,102883

29

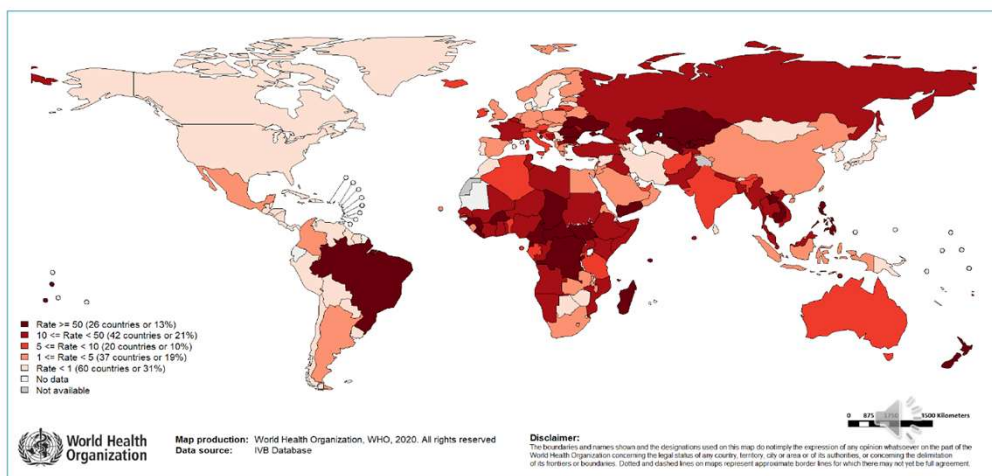


MORBILLO

IMM-COMPR

Top 10**		
Country	Cases	Rate/1M
Brazil	29135	137.18
DR Congo	25536	294.46
Philippines	9016	83.4
Nigeria	8294	41.27
India****	7009	5.12
Kazakhstan	6514	350.35
Bangladesh	6473	38.51
Uzbekistan	5201	158.53
Central African Republic	4914	1018.3
Madagascar	3465	128.48

Other countries with high incidence rates***		
Country	Cases	Rate
New Zealand	1910	398.55
Tonga	34	308.98
Seychelles	28	292.57
Samoa	47	236.29
Liberia	793	159.31
Chad	2505	158.4



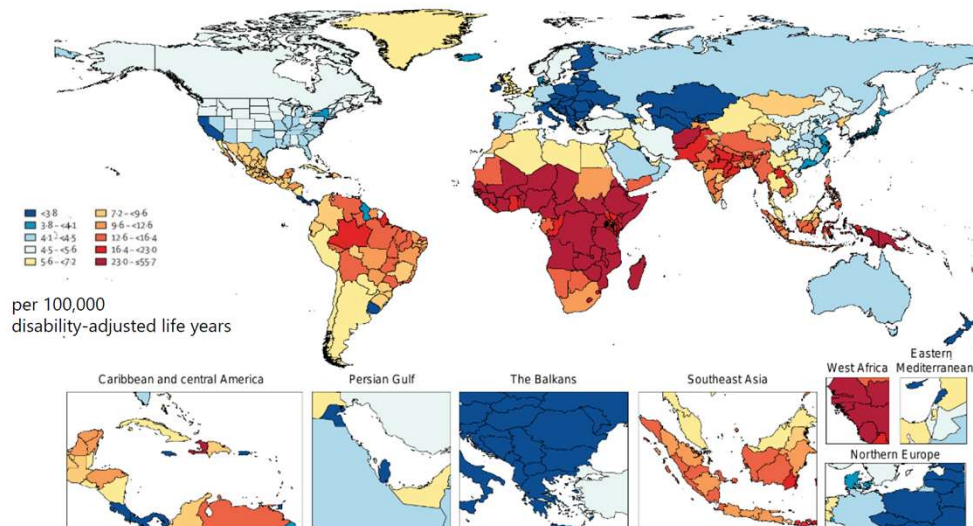
https://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/measles_monthlydata/en/

30



VARICELLA

IMM-COMPR



31



POLIO

IMM-COMPR

The NEW ENGLAND JOURNAL of MEDICINE

BRIEF REPORT

Vaccine-Derived Poliomyelitis 12 Years after Infection in Minnesota

Aaron S. DeVries, M.D., M.P.H., Jane Harper, M.S., Andrew Murray, M.P.H., Catherine Lexau, Ph.D., M.P.H., Lynn Bahta, B.S.N., Jaime Christensen, B.S., Elizabeth Cebelinski, B.S., Susan Fuller, M.B.S., Susan Kline, M.D., M.P.H., Gregory S. Wallace, M.D., M.P.H., Jing H. Shaw, M.D., Cara C. Burns, Ph.D., and Ruth Lynfield, M.D.

SUMMARY

A 44-year-old woman with long-standing common variable immunodeficiency who was receiving intravenous immune globulin suddenly had paralysis of all four limbs and the respiratory muscles, resulting in death. Type 2 vaccine-derived poliovirus was isolated from stool. The viral capsid protein VP1 region had diverged from the vaccine strain at 12.3% of nucleotide positions, and the two attenuating substitutions had reverted to the wild-type sequence. Infection probably occurred 11.9 years earlier (95% confidence interval [CI], 10.9 to 13.2), when her child received the oral poliovirus vaccine. No secondary cases were identified among close contacts or 2038 screened health care workers. Patients with common variable immunodeficiency can be chronically infected with poliovirus, and poliomyelitis can develop despite treatment with intravenous immune globulin.

Those with certain primary immunodeficiency diseases should not be given OPV and should avoid contact with children vaccinated with OPV overseas in the previous 6 weeks.

DeVries AS, Harper J, Murray A, et al. *N Engl J Med* 2011;364:2316-23
<https://wwwnc.cdc.gov/travel/yellowbook/2024/infectious-diseases/poliomyelitis>

32



IL CASO REALE...

IMM-COMPR

Una signora di circa 55 anni, trapiantata di fegato e rene in buone condizioni generali, chiama l'ambulatorio perché due giorni dopo sarà in partenza per Ghana e Sudafrica.

La sua domanda: "Ho bisogno di qualcosa prima di partire?"

1. Certificato di esenzione per il vaccino contro la YF
2. Atovaquone-proguanil come profilassi anti-malarica
3. Azitromicina in caso di grave infezione intestinale
4. Misure di protezione personale (insetti)
5. Precauzioni alimentari (acqua e cibi)
6. Piano da attuare in loco in caso di malattia
7. Portare scorta extra di farmaci, nei contenitori originali, nel bagaglio a mano



33



CONCLUSIONI

IMM-COMPR

**Travel
Medicine
for the
Immune
Compromised
Host**



Work together to determine best timing and itinerary



Weigh risks and benefits of foreign travel



Update routine and travel related vaccines



Considered necessary medications, along with possible drug interactions and side effects



Although more vulnerable to infection, immunocompromise patients can have safe, healthy, productive, and highly enjoyable travel



34