TOP X PAPERS

Pr. Vandercam

Février 2018

Outbreak of human malaria caused by *Plasmodium simium* in the Atlantic Forest in Rio de Janeiro: a molecular epidemiological investigation

Patrícia Brasil, Mariano Gustavo Zalis*, Anielle de Pina-Costa, Andre Machado Siqueira, Cesare Bianco Júnior, Sidnei Silva, André Luiz Lisboa Areas, Marcelo Pelajo-Machado, Denise Anete Madureira de Alvarenga, Ana Carolina Faria da Silva Santelli, Hermano Gomes Albuquerque, Pedro Cravo, Filipe Vieira Santos de Abreu, Cassio Leonel Peterka, Graziela Maria Zanini, Martha Cecilia Suárez Mutis, Alcides Pissinatti, Ricardo Lourenço-de-Oliveira, Cristiana Ferreira Alves de Brito, Maria de Fátima Ferreira-da-Cruz, Richard Culleton, Cláudio Tadeu Daniel-Ribeiro*

- Atlantic Forest in Rio de Janeiro
- P. Vivax eradication 50 years ago
- 2006-2016 : 1032 autochtone cases living Rio urban area, visiting atlantic forest (work, leisure, ecotourism)
- Diagnosis of P. vivax on microscopy or PCR test

***Figure 2*: Map of the Rio de Janeiro state, Brazil, showing the Atlantic Forest and indicating where human malaria cases of simian origin and monkeys infected with *Plasmodium simium* have been detected**

Human cases are represented by red spots of different sizes (symbolising one to eight cases), and the three captured, infected, wild howler monkeys are shown as blue spots. The extension of the area covered by the Atlantic Forest vegetation is indicated in green. All cases were reported in forest fragments located in Serra do Mar, and monkeys carrying *P simium* were found in the vicinity of each area. The municipality of Rio de Janeiro, delimitated with the red bold line, is free of malaria transmission.

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- Atlantic Forest ,New world monkeys
  - P. simium (P. vivax similarities)
  - P. brasilianum (P. malariae similarities)

- Molecular investigation of parasite DNA sequencing

P. simium

- How long misdiagnosis ? Quid hypnozoïte ?

- Zoonotic reservoirs difficult to target

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- **Zoonotic malaria**

  Plasmodium knowlesi (P. malariae, Southeast Asia)

  Plasmodium cynomolgi(2014)(Macaca monkeys)

  Plasmodium simium (howler and capichinn monkeys)

Prolonged Protection Provided by a Single Dose of Atovaquone-Proguanil for the Chemoprophylaxis of *Plasmodium falciparum* Malaria in a Human Challenge Model

Gregory A. Deye,[1] R. Scott Miller,[1] Lori Miller,[2] Carola J. Salas,[4] Donna Tosh,[2] Louis Macareo,[1] Bryan L. Smith,[1] Susan Fracisco,[1] Emily G. Clemens,[5] Jittawadee Murphy,[3] Jason C. Sousa,[1] J. Stephen Dumler,[5] and Alan J. Magill[1]

Support weekly dosing :

- Post exposure prophylax D 4 (6vol)100 % effectiv
  D-7 : 60% effect,
  D-1 : 100%

Journal of
TRAVEL MEDICINE

ORIGINAL ARTICLE

Effectiveness of Short Prophylactic Course of Atovaquone-Proguanil in Travelers to Sub-Saharan Africa

Eyal Leshem, MD,* Eyal Meltzer, MD,*† Shmuel Stienlauf, MD,*† Eran Kopel, MD, MPH,‡ and Eli Schwartz, MD*†

*The Center for Geographic Medicine, The Chaim Sheba Medical Center, Tel Hashomer, Israel; †Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel; ‡Ministry of Health, Jerusalem, Israel

DOI: 10.1111/jtm.12088

- Discontinuation of Atovaquone-Proguanil 1 day after return
- 421 travelers (4749 days in malaria countries)
- **No case of malaria reported (6 months)**

Journal of Travel Medicine

International Society of Travel Medicine
Established 1991
Promoting healthy travel worldwide

Journal of Travel Medicine, 2016, 1–5
doi: 10.1093/jtm/taw064
Original Article

Original Article

Effectiveness of twice a week prophylaxis with atovaquone–proguanil (Malarone®) in long-term travellers to West Africa

Tamar Lachish, MD[1,*], Maskit Bar-Meir, MD[1], Neta Eisenberg, MD[2], and Eli Schwartz, MD[3,4]

[1]The Infectious Diseases Unit, Shaare-Zedek Medical Center, P.O.B 3235, Jerusalem 91301, Israel, [2]Centro Médico La Paz, Malabo, Equatorial Guinea, [3]The Center for Geographic Medicine, the Chaim Sheba Medical Center, Tel-Hashomer, Israel, and [4]Sackler School of Medicine, Tel-Aviv University, Tel-Aviv, Israel

- No prophylax (N=63) : 1,2%/month
- Mefloquine (N=40) : 0,2 %/month
- Ato-proguanil (N=33) : 0%/month (DURING PROPHYLAXIS)

JTM Journal of Travel Medicine
International Society of Travel Medicine
Promoting healthy travel worldwide
Established 1991
Journal of Travel Medicine, 2017, 1–2
doi: 10.1093/jtm/taw080
Correspondence

Correspondence

Acute malaria infection after atovaquone–proguanil prophylaxis

Anna A. Minta, MD[1,2,*], Kathrine R. Tan, MD[2], Kimberly E. Mace, PhD[2] and Paul M. Arguin, MD[2]

- **CDC, 190 acute malaria after A-P prophylaxis** (2006-2014)
  - 85% symptoms after return to the US.
  - Information on AP adherence : 165
    - ➢ 105 missed some doses

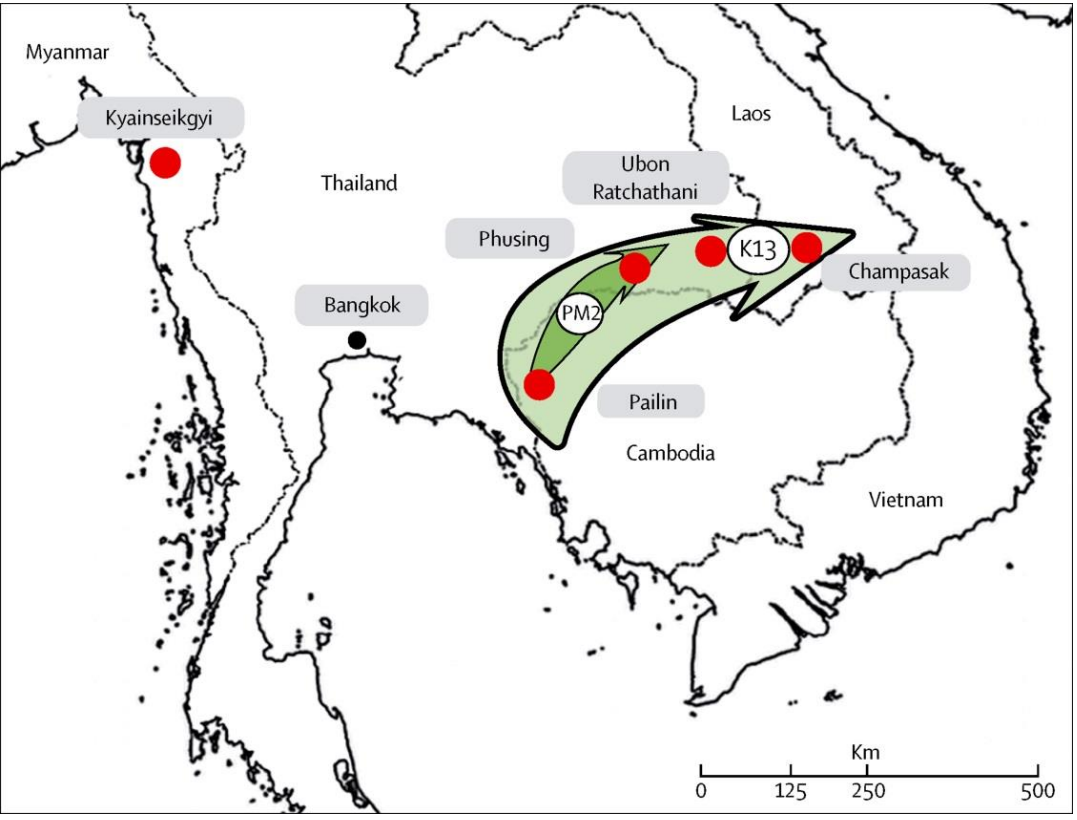
<u>Conclusions</u> :

- **Malaria case after complete (60)-partial(105) A-P prophylaxy**
- Further research for alternate dosing strategies.

The spread of artemisinin-resistant *Plasmodium falciparum* in the Greater Mekong subregion: a molecular epidemiology observational study

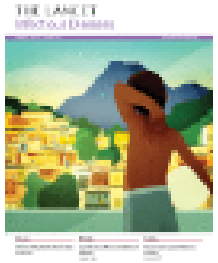
Mallika Imwong, Kanokon Suwannasin, Chanon Kunasol, Kreepol Sutawong, Mayfong Mayxay, Huy Rekol, Frank M Smithuis, Tin Maung Hlaing, Kyaw M Tun, Rob W van der Pluijm, Rupam Tripura, Olivo Miotto, Didier Menard, Mehul Dhorda, Nicholas P J Day, Nicholas J White, Arjen M Dondorp

The Lancet Infectious Diseases , Volume 17, Issue 5, Pages 491-497 (May 2017)



- Cambodia-NE Thailand-Laos 2008
- *PfKelch13* lineage mutation : artemisinin resistance
- *Pfplasmepsin2 emergence is this lineage.*
- P.S. : Artemisinin-resistance induce slow parasit clearance
  - Higher inoculum
  - Selection of partner drug resistance (long half life, monotherapy).

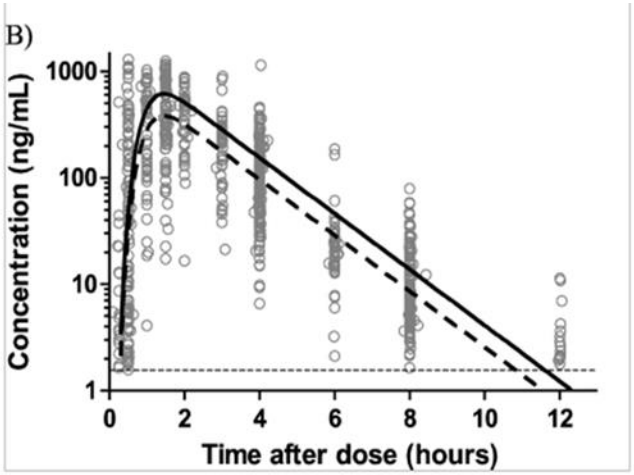
THE LANCET
Infectious Diseases
Volume 17, Issue 12, December 2017, Page 1233

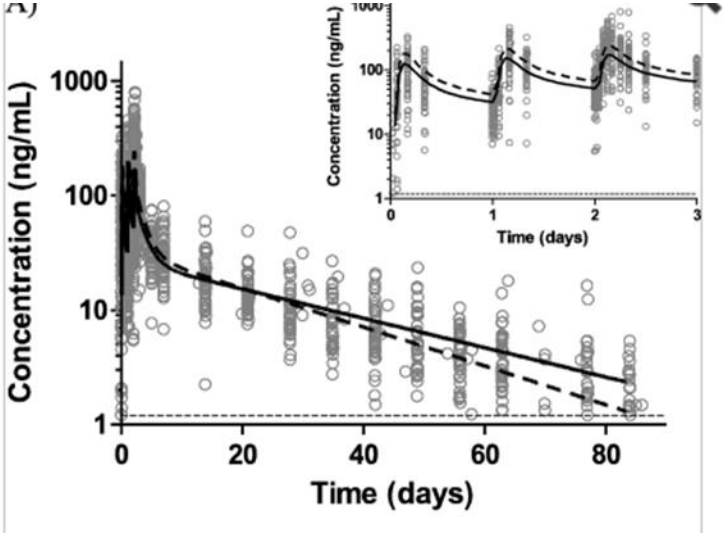


Correspondence

Emergence of *Plasmodium falciparum* triple mutant in Cambodia

Gabriele Rossi [a, b], Martin De Smet [b], Nimol Khim [c], Jean-Marie Kindermans [b] ✉, Didier Menard [c,





Simulated population mean concentration-time curves for piperaquine (A) and dihydroartemisinin (B) u

Safety, tolerability, pharmacokinetics, and activity of the novel long-acting antimalarial DSM265: a two-part first-in-human phase 1a/1b randomised study

James S McCarthy, Julie Lotharius, Thomas Rückle, Stephan Chalon, Margaret A Phillips, Suzanne Elliott, Silvana Sekuloski, Paul Griffin, Caroline L Ng, David A Fidock, Louise Marquart, Noelle S Williams, Nathalie Gobeau, Lidiya Bebrevska, Maria Rosario, Kennan Marsh, Jörg J Möhrle

Lancet Infect Dis 2017; 17: 626–35
Published Online March 28, 2017

Summary

Background DSM265 is a novel antimalarial that inhibits plasmodial dihydroorotate dehydrogenase, an enzyme essential for pyrimidine biosynthesis. We investigated the safety, tolerability, and pharmacokinetics of DSM265, and tested its antimalarial activity.

DSM265 for *Plasmodium falciparum* chemoprophylaxis: a randomised, double blinded, phase 1 trial with controlled human malaria infection

Mihály Sulyok, Thomas Rückle, Alexandra Roth, Raymund E Mürbeth, Stephan Chalon, Nicola Kerr, Sonia Schnieper Samec, Nathalie Gobeau, Carlos Lamsfus Calle, Javier Ibáñez, Zita Sulyok, Jana Held, Tamirat Gebru, Patricia Granados, Sina Brückner, Christian Nguetse, Juliana Mengue, Albert Lalremruata, B Kim Lee Sim, Stephen L Hoffman, Jörg J Möhrle, Peter G Kremsner*, Benjamin Mordmüller*

Lancet Infect Dis 2017; 17: 636–44
Published Online March 28, 2017
http://dx.doi.org/10.1016/S1473-3099(17)30139-1

Summary

Background A drug for causal (ie, pre-erythrocytic) prophylaxis of *Plasmodium falciparum* malaria with prolonged activity would substantially advance malaria control. DSM265 is an experimental antimalarial that selectively inhibits the parasite dihydroorotate dehydrogenase. DSM265 shows in vitro activity against liver and blood stages of *P falciparum*. We assessed the prophylactic activity of DSM265 against controlled human malaria infection (CHMI).

Ticks and Tick-borne Diseases 9 (2018) 120–125

Contents lists available at ScienceDirect

Ticks and Tick-borne Diseases

journal homepage: www.elsevier.com/locate/ttbdis

A new hot spot for tick-borne encephalitis (TBE): A marked increase of TBE cases in France in 2016

- 1642 blood and CSF samples (N = 1460 patients)
- Anti TBEV IgM and IgG Elisa
- TBEV seropositive 5,9 % - 54 patients confirmed TBE
- 48 autochtones (Alsace 43, Alpes 5)
- 6 imported (Switzerland, Finland, Germany, Slovakia)

Ticks and Tick-borne Diseases 9 (2018) 120–125

Contents lists available at ScienceDirect

Ticks and Tick-borne Diseases

journal homepage: www.elsevier.com/locate/ttbdis

A new hot spot for tick-borne encephalitis (TBE): A marked increase of TBE cases in France in 2016

Aurélie Velay[a,b,*], Morgane Solis[a,b], Wallys Kack-Kack[a,b], Pierre Gantner[a,b], Marianne Maquart[c], Martin Martinot[d], Olivier Augereau[e], Dominique De Briel[e], Pierre Kieffer[f], Caroline Lohmann[g], Jean Dominique Poveda[h], Emmanuelle Cart-Tanneur[i], Xavier Argemi[j], Isabelle Leparc-Goffart[c], Sylvie de Martino[k,l], Benoit Jaulhac[k,l], Sophie Raguet[m], Marie-Josée Wendling[a], Yves Hansmann[j], Samira Fafi-Kremer[a,b]

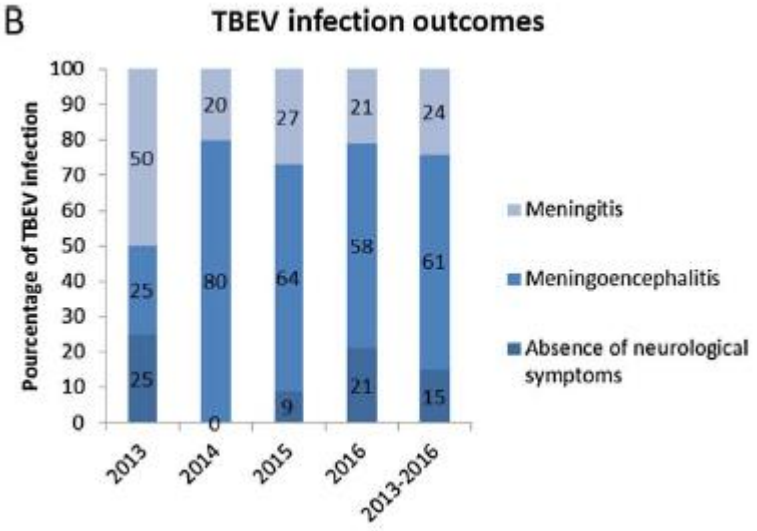


Fig. 1. Clinical findings of the TBE-confirmed cases, 2013–2016.
(B) Distribution of symptoms during the second stage of the disease

Ticks and Tick-borne Diseases 9 (2018) 120–125

Contents lists available at ScienceDirect

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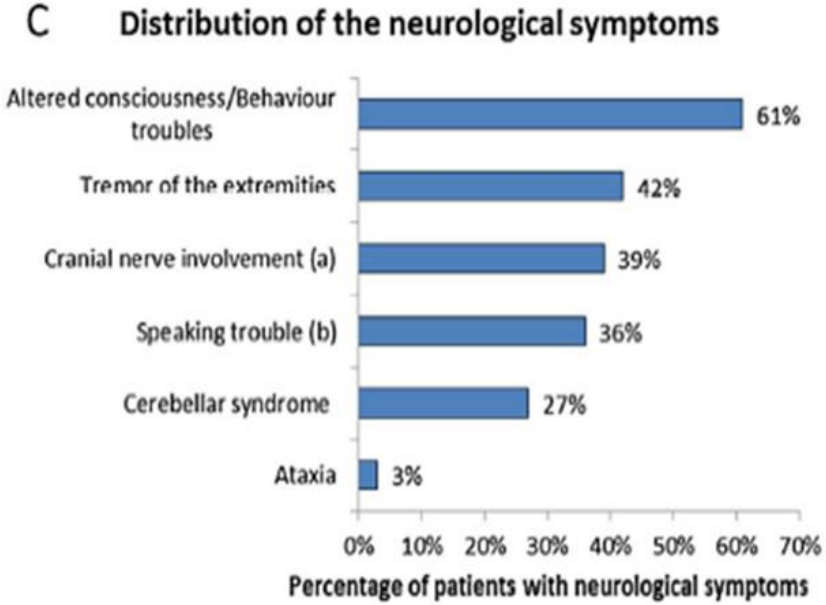
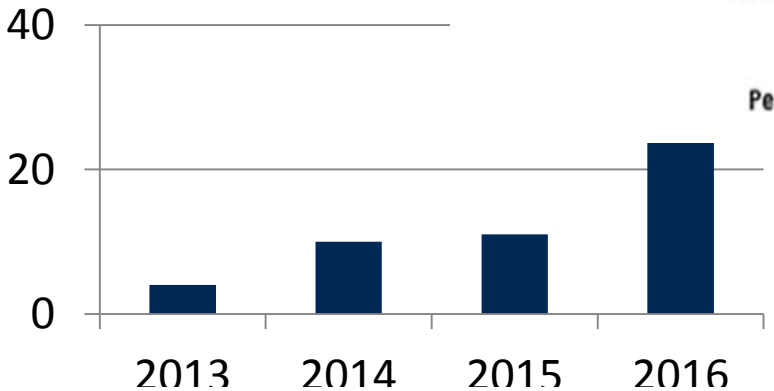
A new hot spot for tick-borne encephalitis (TBE): A marked increase of TBE cases in France in 2016



- Diplopie
- Hypoacousie
- Paralysie faciale



Ann Allergy Asthma Immunol 120 (2018) 49–52

Contents lists available at ScienceDirect

ELSEVIER

Annals of Allergy, Asthma & Immunology

Practice Parameters

Administration of influenza vaccines to egg allergic recipients: A practice parameter update 2017☆

Matthew Greenhawt, MD, MBA, MSc; Paul J. Turner, BM, BcH, FRACP, PhD; John M. Kelso, MD

LAIV. Influenza vaccine recipients with egg allergy are at no greater risk for a systemic allergic reaction than those without egg allergy. Precautions, such as choice of a particular vaccine, special observation periods, or restriction of administration to particular medical settings, are not warranted and constitute an unnecessary barrier to immunization. Vaccine providers and screening questionnaires do not need to ask about the egg allergy status of recipients of influenza vaccine.

Moreover, the ovalbumin content in all IIV available in the United States is less than 1 μg per dose,[1] an amount considered highly unlikely to cause reactions even in the most severely egg allergic

The AAP/COID guidelines now state the following[15]:

- "All children with an egg allergy of any severity can receive an influenza vaccine without any additional precautions beyond those recommended for any vaccine."
- "IIV administered in a single, age-appropriate dose is well tolerated by recipients with a history of egg allergy of any severity."
- "Special precautions for egg-allergic recipients of IIV are not warranted, because the rate of anaphylaxis after IIV administration is no greater in egg-allergic than in non–egg-allergic recipients or from other universally recommended vaccines."
- "Standard vaccination practice for all vaccines in children should include the ability to respond to rare acute hypersensitivity reactions"

The CDC/ACIP, in its guidance for the 2017–2018 influenza ason,[1] also states that persons with egg allergy of any severity n receive any age-appropriate influenza vaccine but recomends that those who report having had reactions to egg that involve mptoms other than hives receive the vaccine in a medical setting supervised by a health care professional.

In addition, current guidelines from the Canadian National Advisory Committee on Immunization state, "Egg allergic individuals

Japanese encephalitis vax

- **2009** : Formalin-Rx whole virion grown on Vero cells : **Europe**, North America and Australia (IXIARIO™/JESEPCT™/JEEV™)
- **2010-2012** : Live attenuated chimeric (YF) vaccine (ChimeriVax™ or IMOJEV™by Sanofi Pasteur) , Available : Australia,Brunei, Myanmar, Malaysia, Philippines, Thailand,

Review article

CLINICAL AND EXPERIMENTAL VACCINE RESEARCH

Enterovirus 71 infection and vaccines

Clin Exp Vaccine Res 2017;6:4-14
https://doi.org/10.7774/cevr.2017.6.1.4
pISSN 2287-3651 • eISSN 2287-366X

- Hand, foot and mouth disease (HFMD)
  - coxsackievirus A16
  - enterovirus 71
- First isolated California 1969
- Children aged < 5 years
- Sometimes :
  - Aseptic meningitis
  - Acute flaccid paralysis
  - Brainstem encephalitis

Review article

CLINICAL AND EXPERIMENTAL VACCINE RESEARCH

Enterovirus 71 infection and vaccines

Clin Exp Vaccine Res 2017;6:4-14
https://doi.org/10.7774/cevr.2017.6.1.4
pISSN 2287-3651 • eISSN 2287-366X

- Sporadic cases - small outbreaks (Can-USA, Afric, Europ)
  - Bulgaria, 1975, 140 cases
  - Nederlands, 2007, 58 CNS
- Large outbreaks
  - China, 2008, 480 955 cases, 126 †
    2008-2012, 7 200 092 cases, 2457†

Organizations	EV71 strain	Dosage (μg)	Population target	Sample size	Status	References
Sinovac Biotech Co., Ltd. (China)	C4a (FY7VP5 strain)	1	6-35 month children	10,245	Phase 3 completed, approved	NCT01507857
Beijing Vigoo Biological Co., Ltd. (China)	C4a (H07 strain)	0.8	6-35 month children	10,077	Phase 3 completed	NCT01508247
CAMS (China)	C4a (H07 strain)	0.25	6-71 month children	12,000	Phase 3 completed, approved	NCT01569581
NHRI (Taiwan)	B4	5 and 10	Adults	60	Phase 1 completed	NCT01268787
Inviragen (Singapore)	B2	0.6 and 3	Adults	36	Phase 1 completed	NCT01376479

The Journal of Infectious Diseases

MAJOR ARTICLE

2-Year Efficacy, Immunogenicity, and Safety of Vigoo Enterovirus 71 Vaccine in Healthy Chinese Children: A Randomized Open-Label Study

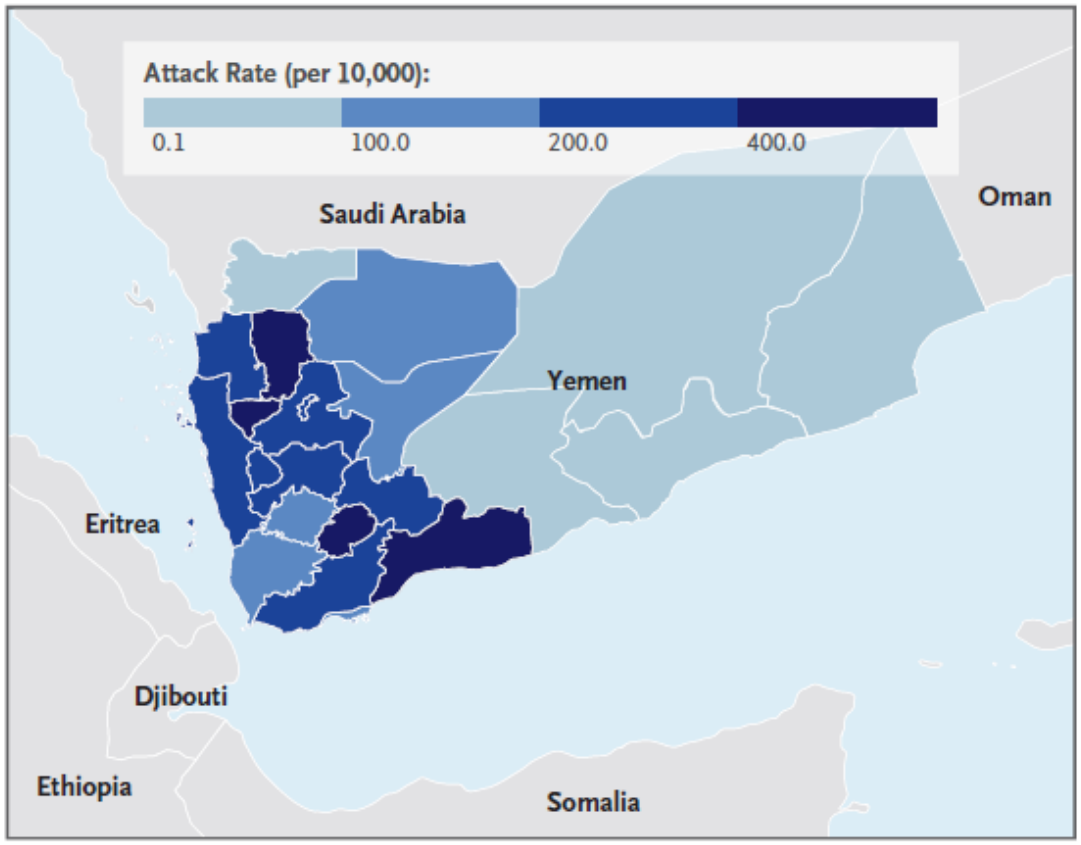
Mingwei Wei,[1,a] Fanyue Meng,[2a] Shiyuan Wang,[3,a] Jingxin Li,[2] Yuntao Zhang,[4] Qunying Mao,[5] Yuemei Hu,[2] Pei Liu,[3] Nianmin Shi,[6] Hong Tao,[2] Kai Chu,[2] Yuxiao Wang,[3] Zhenglun Liang,[5] Xiuling Li,[4] and Fengcai Zhu[1,2]

[1]Department of Epidemiology and Biostatistics, School of Public Health, Nanjing Medical University, [2]Jiangsu Province Center for Disease Control and Prevention, [3]School of Public Health, Southeast University, Nanjing, [4]Beijing Vigoo Biological, [5]National Institute for Food and Drug Control, and [6]Chaoyang District Center for Disease Control and Prevention, Beijing, China

The NEW ENGLAND JOURNAL of MEDICINE

Cholera in Yemen — An Old Foe Rearing Its Ugly Head

Firdausi Qadri, Ph.D., M.D., Taufiqul Islam, M.B.B.S., M.P.H., and John D. Clemens, M.D.



Cholera Attack Rate in the Governorates of Yemen, 2017.

Data are as of October 1 and are from the *Yemen: Cholera Response Weekly Epidemiological Bulletin*, World Health Organization (www.emro.who.int/images/stories/yemen/Yemen_-_Cholera_Response_-_Week_39_2017_1.pdf).

Cholera Vaccination Campaign Gets Underway in Zambia

Organisation mondiale de la Santé

Centre des médias | Publications | Pays | Programmes et projets | Gouvernance | À propos de l' OMS

Préparation et riposte aux situations d'urgence

Choléra – Zambie

Bulletin d'information sur les flambées épidémiques
11 décembre 2017

WHO: Heavy Rains in DRC Worsening Cholera Epidemic

Clinical Infectious Diseases
MAJOR ARTICLE

Single-dose Live Oral Cholera Vaccine CVD 103-HgR Protects Against Human Experimental Infection With *Vibrio cholerae* O1 El Tor

Wilbur H. Chen,[1] Mitchell B. Cohen,[2,a] Beth D. Kirkpatrick,[3] Rebecca C. Brady,[2] David Galloway,[2] Marc Gurwith,[4] Robert H. Hall,[5] Robert A. Kessler,[1] Michael Lock,[4] Douglas Haney,[4] Caroline E. Lyon,[3] Marcela F. Pasetti,[1] Jakub K. Simon,[4,b] Flora Szabo,[2] Sharon Tennant,[1] and Myron M. Levine[1]

- Live attenuated oral single dose vax : mass vaxination (,inactivted,2-3doses)
- **Healthy US volunteers** (n =197),blood group O,vax =95 vs 102 placebo),
  challenge D 10 (n=68)or D 90 (n =66)
  Vaccine safety : DRH 1,1 % vs 3 %
- **Vaccine efficacity (3 -5 l stool): 90% at D10**
  80% at D90
- **Protection by day 10 : travelrs short notice**

Vaxchora® (lyophilized CVD 103-HgR)

The FDA recently approved a single-dose live oral cholera vaccine called Vaxchora (lyophilized CVD 103-HgR) in the United States. The Advisory Committee on Immunization Practices (ACIP) voted to approve the vaccine for adults 18 – 64 years old who are traveling to an area of active cholera transmission.

- An area of active cholera transmission is defined as a province, state, or other administrative subdivision within a country where cholera infections may be reported regularly (endemic) or where a cholera outbreak is occurring (epidemic), and includes areas with cholera activity within the past year.
- The vaccine is not regularly recommended for most travelers from the United States, as most travelers do not visit areas with active cholera transmission.
- No country or territory currently requires vaccination against cholera as a condition for entry.

Vaxchora has been reported to reduce the chance of severe diarrhea in people by 90% at 10 days after vaccination and by 80% at 3 months after vaccination. The safety and effectiveness of Vaxchora in pregnant or breastfeeding women is not yet known, and it is also not known how long protection lasts beyond 3 – 6 months after getting the vaccine. Side effects from Vaxchora are uncommon and may include tiredness, headache, abdominal pain, nausea and vomiting, lack of appetite, and diarrhea.

Additional information about Vaxchora can be obtained from the manufacturers at www.vaxchora.com.

Dukoral® and ShanChol®

Two other oral inactivated, or non-live cholera vaccines are available: Dukoral (manufactured by SBL Vaccines) and ShanChol (manufactured by Shantha Biotec in India). These cholera vaccines are World Health Organization (WHO) prequalified, but are not available in the U.S.

Protection against cholera from killed whole-cell oral cholera vaccines: a systematic review and meta-analysis

Qifang Bi, Eva Ferreras, Lorenzo Pezzoli, Dominique Legros, Louise C Ivers, Kashmira Date, Firdausi Qadri, Laura Digilio, David A Sack, Mohammad Ali, Justin Lessler, Francisco J Luquero, Andrew S Azman, on behalf of the Oral Cholera Vaccine Working Group of The Global Task Force on Cholera Control*

Lancet Infect Dis 2017; 17: 1080–88
Published Online July 17, 2017
http://dx.doi.org/10.1016/S1473-3099(17)30359-6

Summary

Background Killed whole-cell oral cholera vaccines (kOCVs) are becoming a standard cholera control and prevention tool. However, vaccine efficacy and direct effectiveness estimates have varied, with differences in study design, location, follow-up duration, and vaccine composition posing challenges for public health decision making. We did a systematic review and meta-analysis to generate average estimates of kOCV efficacy and direct effectiveness from the available literature.

- Shanchol , Hyderabad, India : 1,85 $/dose
- **2 doses :**
  - children < 5 years…….. 30% efficacy
  - children > 5 years …….. 64%
  - 1st year …….. 56%
  - 2nd year …….. 59%
  - 3rd year …….. 39%
  - 4th year …….. 26%
- **1 dose :** short-term protection 40-69%

Safety of a killed oral cholera vaccine (Shanchol) in pregnant women in Malawi: an observational cohort study

Mohammad Ali, Allyson Nelson, Francisco J Luquero, Andrew S Azman, Amanda K Debes, Maurice Mwesawina M'bang'ombe, Linly Seyama, Evans Kachale, Kingsley Zuze, Desire Malichi, Fatima Zulu, Kelias Phiri Msyamboza, Storn Kabuluzi, David A Sack

Lancet Infect Dis 2017; 17: 538–44
Published Online February 1, 2017
http://dx.doi.org/10.1016/S1473-3099(16)30523-0

Summary

Background Pregnancy increases the risk of harmful effects from cholera for both mothers and their fetuses. A killed oral cholera vaccine, Shanchol (Shantha Biotechnics, Hydrabad, India), can protect against the disease for up to 5 years. However, cholera vaccination campaigns have often excluded pregnant women because of insufficient safety data for use during pregnancy. We did an observational cohort study to assess the safety of Shanchol during pregnancy.

- Mass vaccination campaign : 361 pregnant women
- Support use for pregnant women in cholera affected regions.

The NEW ENGLAND JOURNAL of MEDICINE

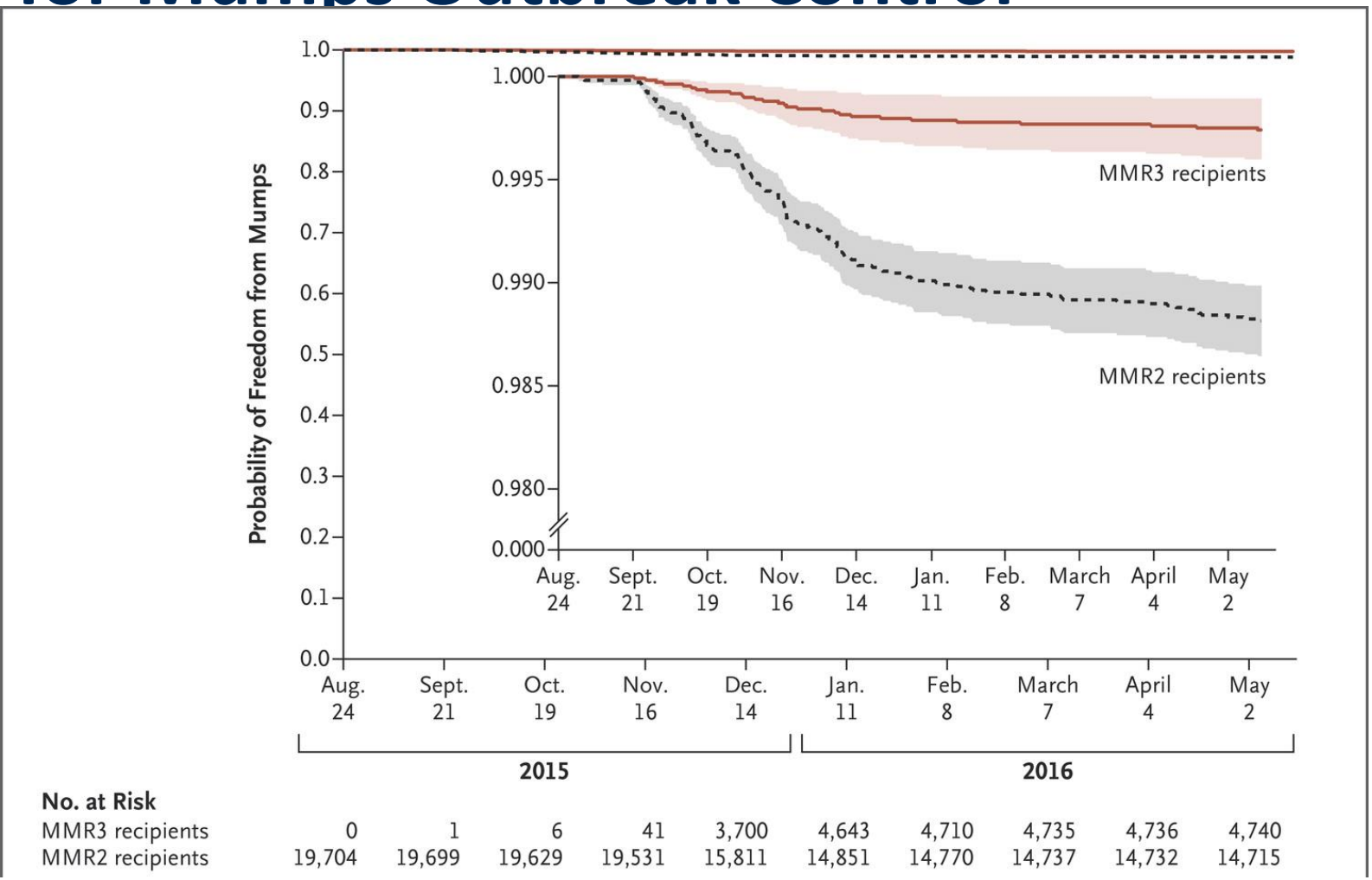
ORIGINAL ARTICLE

Effectiveness of a Third Dose of MMR Vaccine for Mumps Outbreak Control

Cristina V. Cardemil, M.D., M.P.H., Rebecca M. Dahl, M.P.H., Lisa James, R.N., M.S.N., Kathleen Wannemuehler, Ph.D., Howard E. Gary, Ph.D., Minesh Shah, M.D., M.P.H., Mona Marin, M.D., Jacob Riley, M.S., Daniel R. Feikin, M.D., Manisha Patel, M.D., and Patricia Quinlisk, M.D., M.P.H.

- Outbreak , University of IOWA
- 20 496 students, the peak

Effectiveness of a Third Dose of MMR Vaccine for Mumps Outbreak Control



- THIRD DOSE DELAY PROTECTION
  - 61% D7
  - 78% D28

Effectiveness of a Third Dose of MMR Vaccine for Mumps Outbreak Control

- ATTACK RATE / 1000
  - 0 dose 47,6*
  - 1 dose 32,8*
  - 2 doses 14,5
  - 3 doses 6,7
  - 4 doses 0*

0-2 Y	1,6
3-12 Y	3,9
13-28 Y	11,3-17,7

* N = 42, 61, 75, …

International Journal of Infectious Diseases 66 (2018) 1–4

Contents lists available at ScienceDirect

International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid

Perspective

Emergent lineages of mumps virus suggest the need for a polyvalent vaccine

Table 2
Divergence between vaccine strain JL5 and outbreak strains.[a]

Epitope	Protein	Sequence[b]	% Divergent sites	% Structural divergence
1	HN	PSKFFTISDSATFAPGPVSNA PSKLFIMLDNATFAPGPVVNA	33%	19%
2	HN	TFRTCFRILALSVQAVTLILVIVTLGELVR TFRTCFRILVLSVQAVTLILVIVTLGELIR	10%	63%
3	HN	LSNQLSSI	0%	N/A
4	HN	ESATMIASAVGVMNQVIHGVTVSLPL ESAAVIASAVGVMNQVIHGVTVSLPL	8%	27%
5	HN	NQLLATLATICTSQKQVSNCSTNIPLVND NQLLSTLATICTNRRNQVSNCSTNIPLIND	17%	7%
6	HN	ATHDFSIGH	0%	N/A
7	HN	GCTRIPSFSLKTHWCYTHNVIN	0%	N/A
8	HN	SNQYVSMGILVQTA SNQYVSMEILAQTA	14%	71%
9	HN	KTLKIQYLS	0%	N/A
10	HN	NRKSCSIATVPDGCAMYCYVST	0%	N/A
11	HN	PPTQKLILLFYN PPTQKLTLLFYN	8%	58%
12	HN	WATLVPGVGSG WATLVPGAGSG	9%	0%
13	HN	FENKLIFPAYGGVLPNSTLGVKSAR FENKLIFPAYGGVLPNSTLGVKLAR	4%	24%
14	HN	FFRPVNPYNPCSGP	0%	N/A
15	HN	ALRSYFPS	0%	N/A
16	HN	FSNRRIQSAFLVCAWNQILVTNCELVVPS FSSRRVQSAFLVCAWNQILVTNCELVVPS	7%	3%
17	HN	EGRVLLINNRLLYYQ	0%	N/A
18	HN	WPYELLYEIS	0%	N/A
19	HN	SGENVCPTACVSGVYLDPWPLTPYSH SGENVCPIVCVSGVYLDPWPLTLYRH	15%	38%
20	HN	FTGALLN	0%	N/A
21	HN	VNPTLYVSALNNLKVLAP	0%	N/A
22	HN	GTQGLFAS	0%	N/A
23	HN	TTTTCFQ	0%	N/A
24	HN	DASVYCVYIM	0%	N/A
25	HN	ASNIVGEFQILPVLTR ASNIVGEFQILPVLAR	6%	31%
SH	SH	MPAIQPPLYLTFLLLILYLIITLYVWIILTVTYKTSVRHAALYQRSFFHWSFDHSL MPAIQPPLYLTFLVLILYLIITLYVWTILTINYKTSVRYAALYQRSFSRWGFDHSL	14%	5%

N/A: not applicable.
[a] Divergence reported in Table 2 reflects only changes in predicted antigenic epitopes. Additional divergent sites are found in non-antigenic regions.

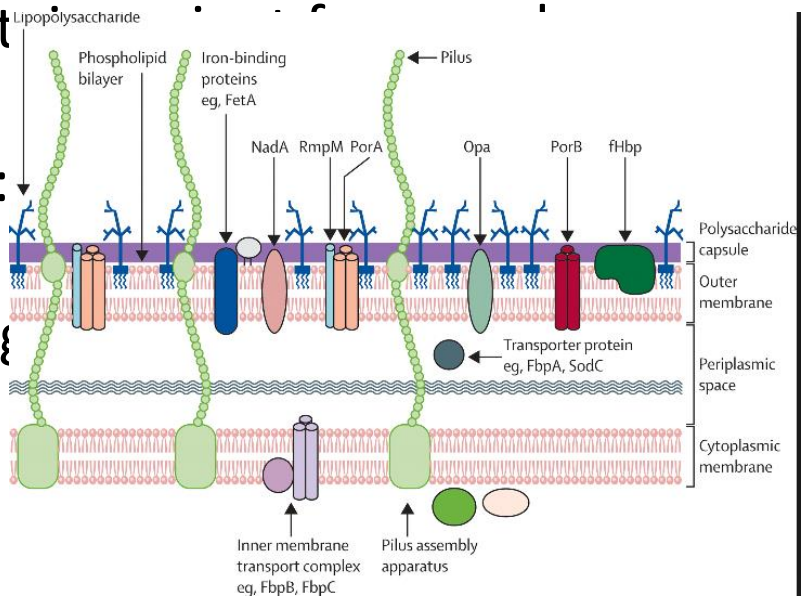
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A Bivalent Meningococcal B Vaccine in Adolescents and Young Adults

Lars Ostergaard, M.D., Ph.D., Timo Vesikari, M.D., Ph.D.,

- Trumenba, Pfizer (MenB-FHbp) :
  - Bivalent
  - One factor H-binding prot[illegible] subfamily (A, B).
- Bexsero, Novartis (4CMenB) :
  - Factor H-binding protein
  - Neisserial heparin-bindin[illegible]
  - Neisserial adhesin A
  - Porin protein A (PorA)



The NEW ENGLAND JOURNAL of MEDICINE

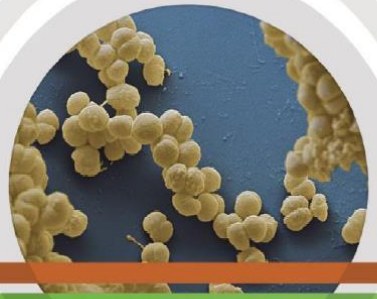
ORIGINAL ARTICLE

A Bivalent Meningococcal B Vaccine in Adolescents and Young Adults

Lars Ostergaard, M.D., Ph.D., Timo Vesikari, M.D., Ph.D.,

Conclusions

- Broadly protective bactericidal responses against meningococcal B strains.(representative panel)
  - ± 90% after 3 doses
- Composite response (all 4) : ± 83% after 3 doses
- Responses to the 4 primary strains were predictive of responses to the 10 additional strains.

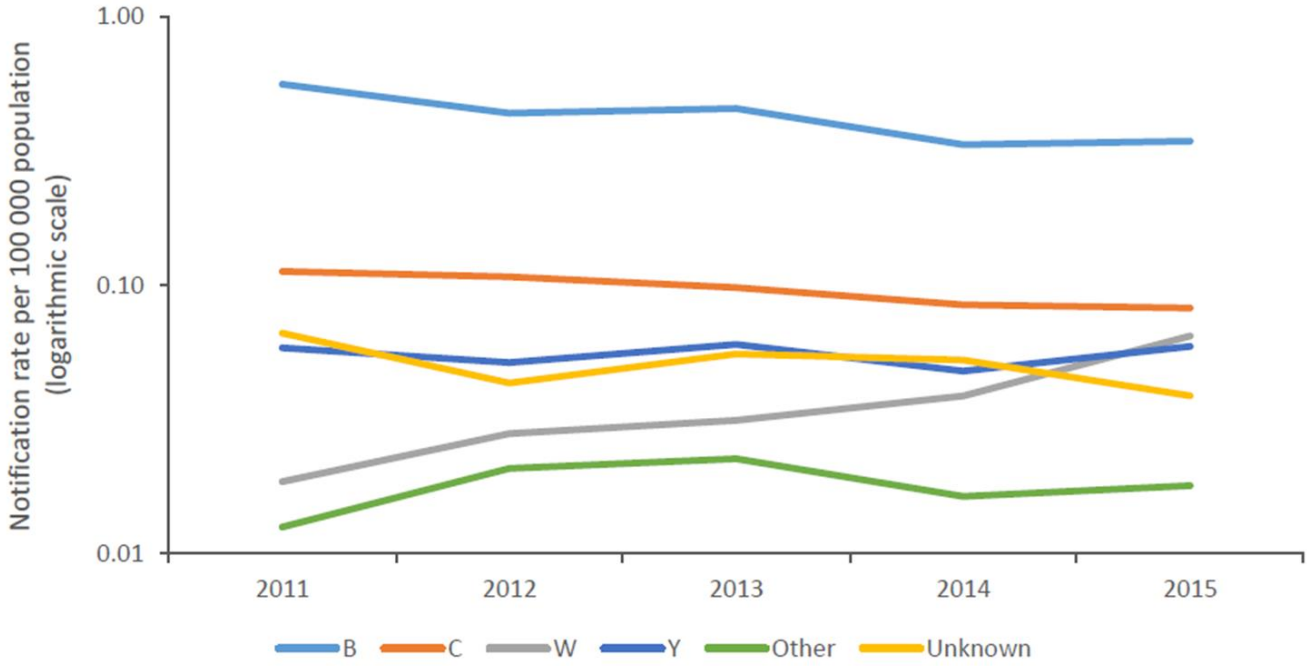


SURVEILLANCE REPORT

Annual Epidemiological Report for 2015

Invasive meningococcal disease

Figure 6. Notification rate of confirmed cases of invasive meningococcal disease, by serogroup and year, EU/EEA, 2011–2015



Vaccine 35 (2017) 2034–2041

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

The epidemiology of invasive meningococcal disease in EU/EEA countries, 2004–2014

Robert Whittaker [a,*], Joana Gomes Dias [a], Miriam Ramliden [a,b], Csaba Ködmön [a], Assimoula Economopoulou [a,c], Netta Beer [a], Lucia Pastore Celentano [a], the ECDC

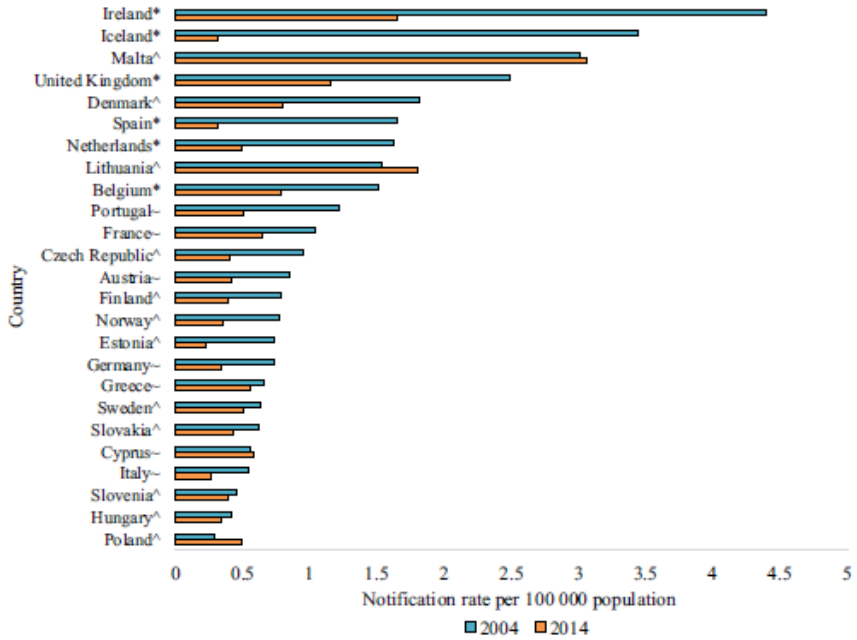


Fig. 2. Annual notification rate per 100,000 population of invasive meningococcal disease in 2004 and 2014, by country, 25 European countries. *MCCpre2004: countries that introduced MCC vaccination before 2004; ~MCC2004-14: countries that introduced MCC vaccination during 2004–2014; ^noMCC: countries that did not have routine MCC vaccination.

Impact of MenAfriVac in nine countries of the African meningitis belt, 2010–15: an analysis of surveillance data

Caroline L Trotter, Clément Lingani, Katya Fernandez, Laura V Cooper, André Bita, Carol Tevi-Benissan, Olivier Ronveaux, Marie-Pierre Préziosi, James M Stuart

Summary

Background In preparation for the introduction of MenAfriVac, a meningococcal group A conjugate vaccine developed for the African meningitis belt, an enhanced meningitis surveillance network was established. We analysed surveillance data on suspected and confirmed cases of meningitis to quantify vaccine impact.

Lancet Infect Dis 2017; 17: 867–72
Published Online
May 22, 2017

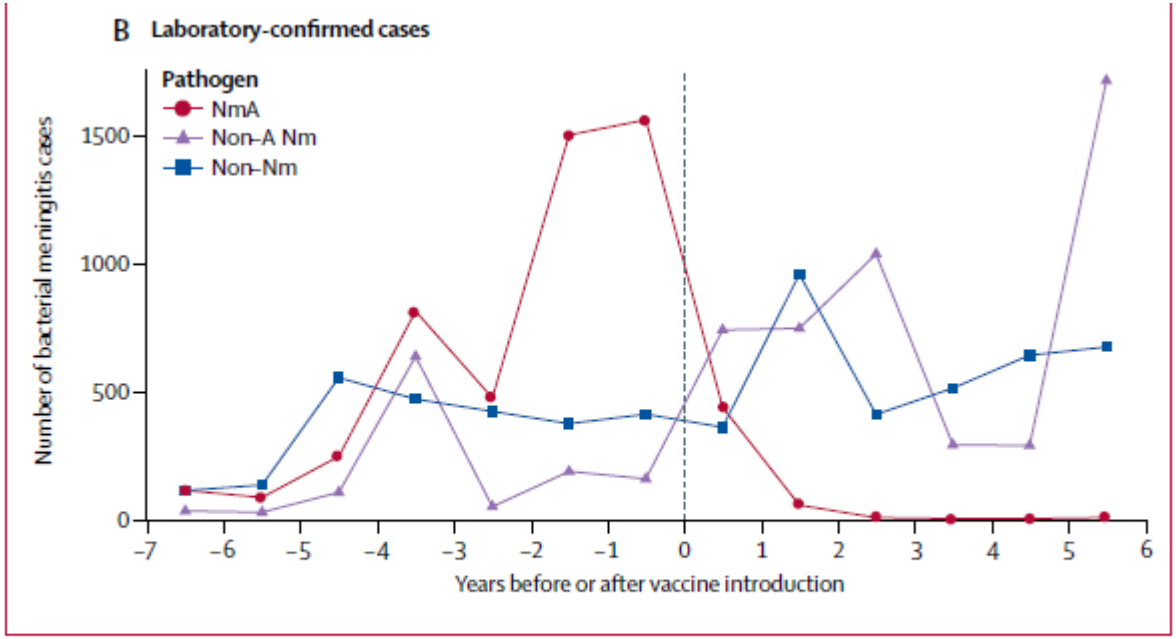


Figure: **Total annual suspected and confirmed cases of bacterial meningitis across all nine countries in relation to MenAfriVac introduction (dotted line)**
Nm=*N meningitidis*. Non-A Nm=other meningococcal serogroups. Non-Nm=Pathogens other than *N meningitides*.

Impact of MenAfriVac in nine countries of the African meningitis belt, 2010–15: an analysis of surveillance data

Caroline L Trotter, Clément Lingani, Katya Fernandez, Laura V Cooper, André Bita, Carol Tevi-Benissan, Olivier Ronveaux, Marie-Pierre Préziosi, James M Stuart

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Lancet Infect Dis 2017; 17: 867–72
Published Online
May 22, 2017

	Total confirmed cases† (% of suspected)	*N meningitidis* A	*N meningitidis* W	*N meningitidis* C*	*N meningitidis* X*	Other *N meningitidis* or undetermined serogroup*	Total *N meningitidis*	*Streptococcus pneumoniae*	*Haemophilus influenzae* type b	Other
2005	693 (10·0%)	180	33	..	..	53	266	266	100	61
2006	1976 (7·1%)	921	37	..	581	29	1568	258	83	67
2007	1101 (3·1%)	609	62	..	..	9	680	297	74	50
2008	1449 (5·7%)	1048	7	..	..	65	1120	242	48	39
2009	2573 (3·3%)	1994	90	..	..	30	2114	350	34	75
2010	1530 (7·6%)	430	718	3	55	13	1118	340	46	26
2011	1750 (12·4%)	111	508	5	154	6	784	876	53	37
2012	1724 (10·8%)	49	955	3	138	30	1175	484	40	25
2013	739 (11·3%)	4	210	8	15	49	286	408	31	14
2014	1051 (14·7%)	0	274	46	11	35	366	625	38	22
2015	2778 (19·2%)	4	524	1219	20	62	1829	703	36	210

..=data not available. *For 2005–09, other *Neisseria meningitidis* includes *N meningitidis* C and *N meningitidis* X, apart from 2006 data for Niger. †Laboratory data not reported for Ghana in 2005, 2006, and 2008; Cote d'Ivoire in 2006, 2007, 2011, and 2014; Chad in 2008 and 2014; and Nigeria in 2008.

Table 2: Confirmed meningitis cases and organisms detected in cerebrospinal fluid in nine countries of the African meningitis belt, 2005–2015

Despite successful vaccines *Neisseria meningitidis* strikes again

Neisseria meningitidis (also known as meningococcus) is divided into 12 distinct serogroups, of which serogroups A, B, C, W, X, and Y are medically most important and are associated with more than 90% of invasive meningococcal disease globally. Meningococcal epidemiology is unpredictable and incompletely understood, and the incidence of invasive meningococcal disease is highly variable worldwide. Incidence is low (0·5–5 cases per 100 000 population per year) in non-epidemic areas such meningitis belt, such as Niger, large-scale epidemics, most frequently caused by *N meningitidis* serogroup A (NmA), occur every 5–12 years alongside endemic and annual outbreaks of invasive meningococcal disease.[3] With the goal of eliminating these devastating large-scale epidemics, a novel meningococcal serogroup A conjugate vaccine (MACV) was introduced in Niger in 2010. Through preventive mass vaccination campaigns that were progressively rolled out, MACV has been

Emergence of epidemic *Neisseria meningitidis* serogroup C in Niger, 2015: an analysis of national surveillance data

Fati Sidikou, Maman Zaneidou*, Ibrahim Alkassoum, Stephanie Schwartz, Bassira Issaka, Ricardo Obama, Clement Lingani, Ashley Tate, Flavien Ake, Souleymane Sakande, Sani Ousmane, Jibir Zanguina, Issaka Seidou, Innocent Nzeyimana, Didier Mounkoro, Oubote Abodji, Xin Wang, Muhamed-Kheir Taha, Jean Paul Moulia-Pelat, Assimawe Pana, Goumbi Kadade, Olivier Ronveaux, Ryan Novak, Odile Ouwe Missi Oukem-Boyer†, Sarah Meyer†, for the MenAfriNet consortium*

Lancet Infect Dis 2016; 16: 1288–94

Summary

Background To combat *Neisseria meningitidis* serogroup A epidemics in the meningitis belt of sub-Saharan Africa, a meningococcal serogroup A conjugate vaccine (MACV) has been progressively rolled out since 2010. We report the

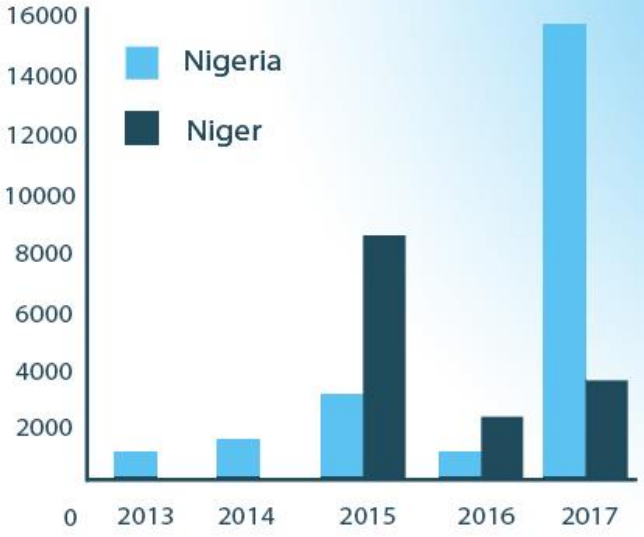
RISK OF MENINGITIS EPIDEMICS IN AFRICA:

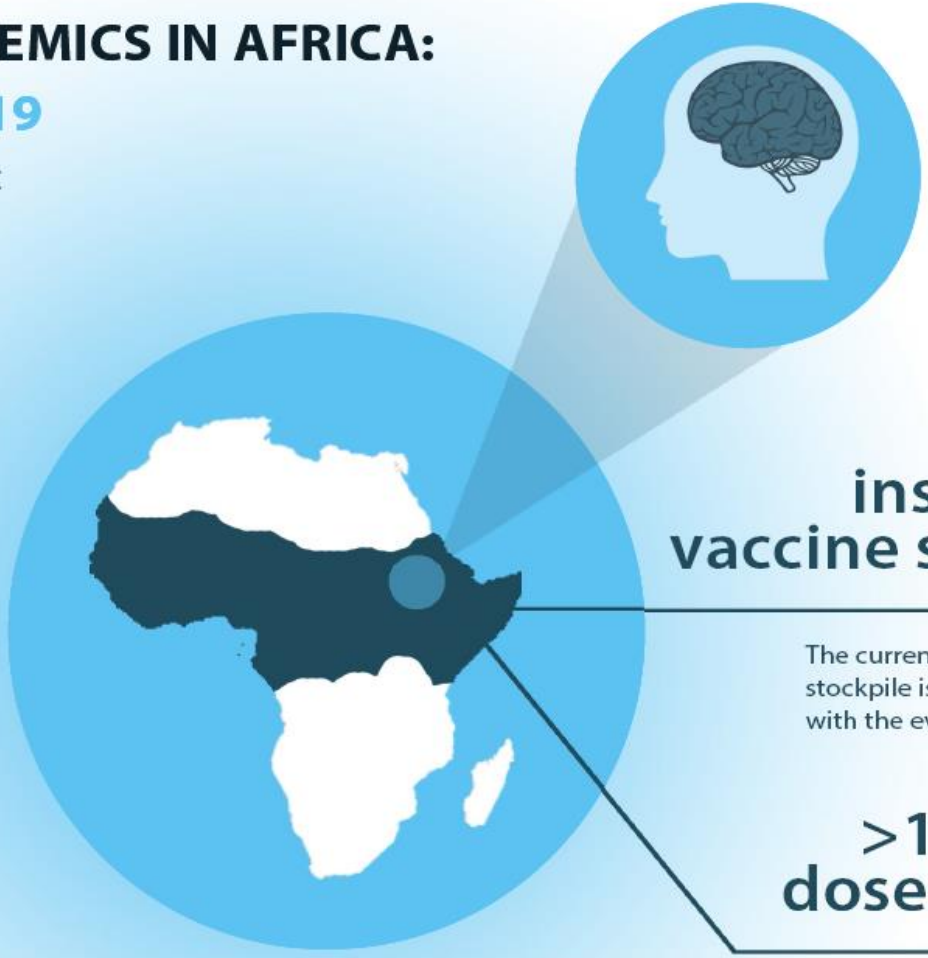
HIGH THREAT IN 2018-2019

A new meningococcal meningitis clone of serogroup C is expanding in Sub-Saharan Africa, associated with a huge risk of a major epidemic in the next two years.

- The new strain is hyper invasive
- Population immunity is low
- Spread to neighbouring countries

Number of suspected meningitis cases during Nm C outbreaks, 2013-2017





28 000 - 72 000

NEW CASES COULD OCCUR IN 2018-2019

insufficient vaccine stockpile

The current international vaccine stockpile is not sufficient to cope with the eventual response needs.

>10 million doses needed

Additional C-containing vaccine doses, preferably from a conjugate vaccine, would be necessary to complement the current stockpile levels for 2018-2019.

ACTIONS FOR WHO AND PARTNERS

- Increase global vaccine availability
- Increase preparedness in countries

World Health Organization

Import and spread of extended-spectrum β-lactamase-producing Enterobacteriaceae by international travellers (COMBAT study): a prospective, multicentre cohort study

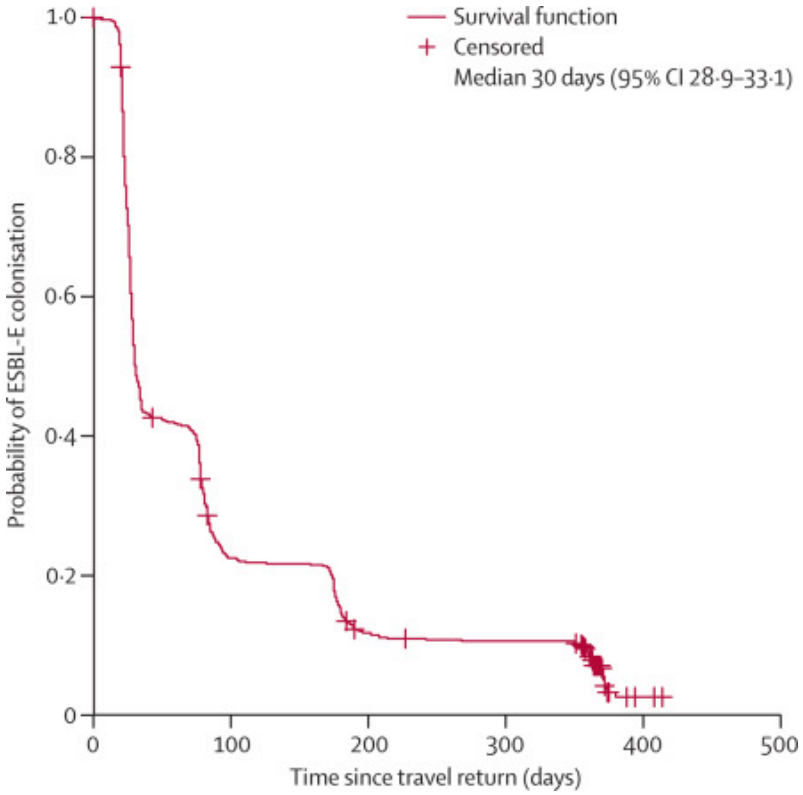
Lancet Infect Dis 2017; 17:78–85

Maris S Arcilla*, Jarne M van Hattem*, Manon R Haverkate, Martin C J Bootsma, Perry J J van Genderen, Abraham Goorhuis, Martin P Grobusch, Astrid M Oude Lashof, Nicky Molhoek, Constance Schultsz, Ellen E Stobberingh, Henri A Verbrugh, Menno D de Jong, Damian C Melles, John Penders

- Prospective multicenter study
- 2001 Dutch travelers , 215 non-traveling household members
- Faecal samples and questionnaires before and after return (to 12 months)
- Screened for ESBL Enterobacteriaceae

Import and spread of extended-spectrum β-lactamase-producing Enterobacteriaceae by international travellers (COMBAT study): a prospective, multicentre cohort study

Maris S Arcilla, Jarne M van Hattem*, Manon R Haverkate, Martin C J Bootsma, Perry J J van Genderen, Abraham Goorhuis, Martin P Grobusch, Astrid M Oude Lashof, Nicky Molhoek, Constance Schultsz, Ellen E Stobberingh, Henri A Verbrugh, Menno D de Jong, Damian C Melles, John Penders*



Kaplan-Meier estimate of time to decolonisation of ESBL-E in travellers

SCIENTIFIC REPORTS

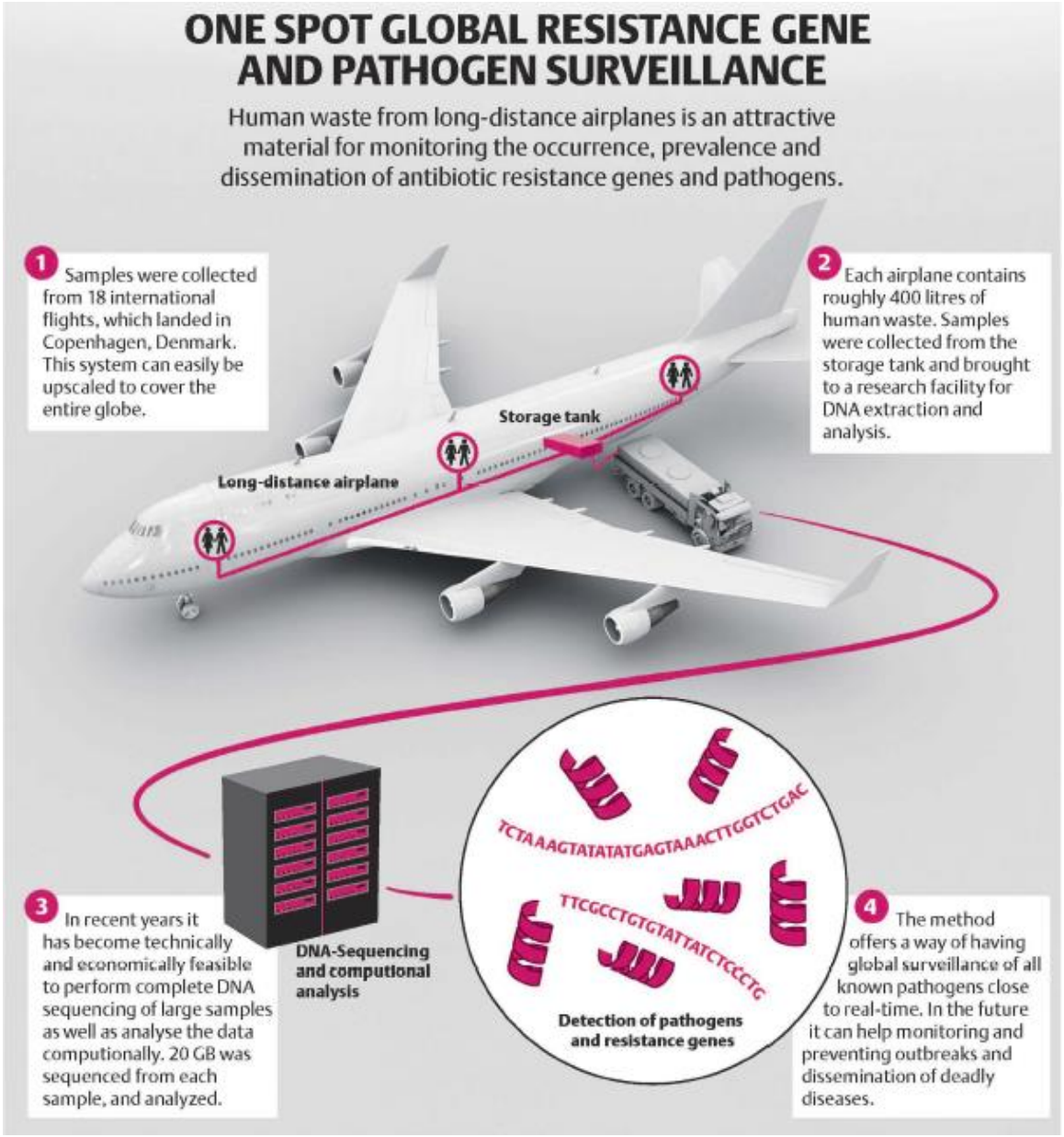
OPEN

Received: 17 December 2014
Accepted: 17 April 2015
Published: 10 July 2015

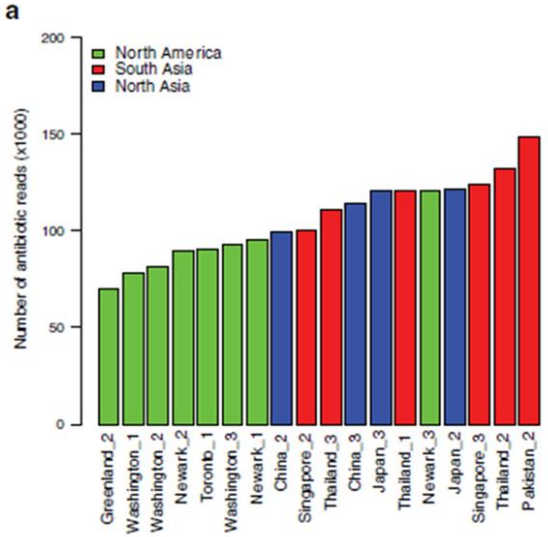
Meta-genomic analysis of toilet waste from long distance flights; a step towards global surveillance of infectious diseases and antimicrobial resistance

Thomas Nordahl Petersen[1], Simon Rasmussen[1], Henrik Hasman[2], Christian Carøe[1], Jacob Bælum[1], Anna Charlotte Schultz[2], Lasse Bergmark[2], Christina A. Svendsen[2], Ole Lund[1], Thomas Sicheritz-Pontén[1] & Frank M. Aarestrup[2]

Meta-genomic analysis of toilet waste from long distance flights; A step towards global surveillance of infectious diseases and antimicrobial resistance



Meta-genomic analysis of toilet waste from long
A step towards global surveillance of
ses and antimicrobial resistance



- Significantly higher abundance and diversity of genes and antimicrobial resistance including CTX-M on airplanes from South Asia
- Salmonella enterica and Norovirus : higher amount from South Asia
- Clostridium difficile : more abundant from North America

Continental-scale pollution of estuaries with antibiotic resistance genes

Yong-Guan Zhu ✉, Yi Zhao, Bing Li, Chu-Long Huang, Si-Yu Zhang, Shen Yu, Yong-Shan Chen, Tong Zhang, Michael R. Gillings & Jian-Qiang Su ✉

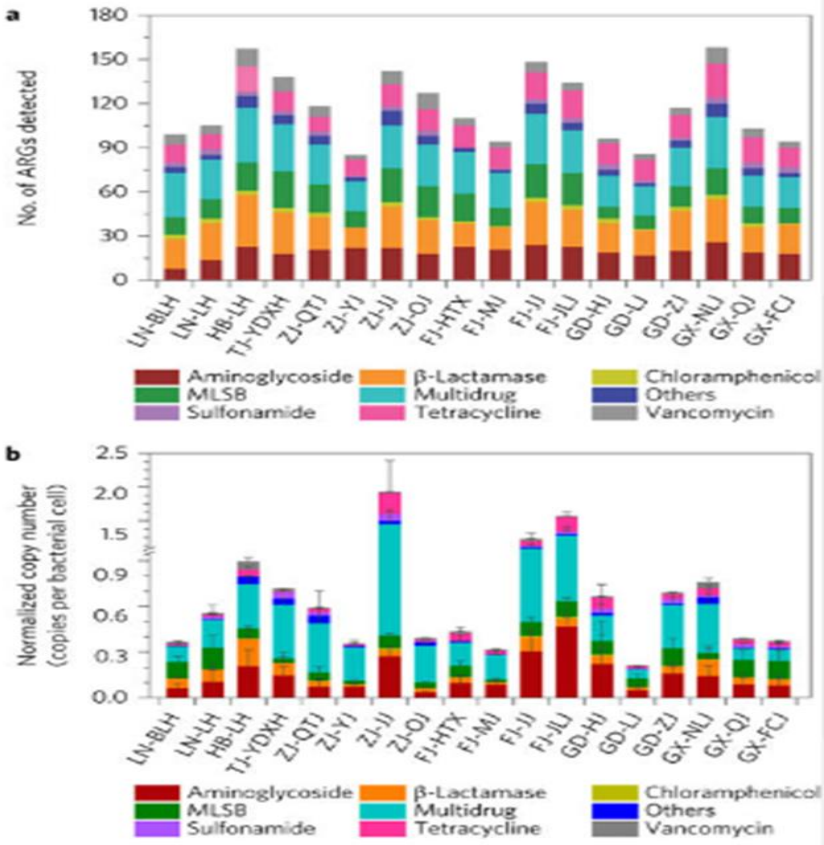
Nature Microbiology **2**, Article number: 16270 (2017)

Received: 10 May 2016

Accepted: 16 December 2016

Figure 1: Distribution of antibiotic resistance genes (ARGs) and mobile genetic elements (MGEs) in estuarine sediment samples along the coast of China.

Figure 2: ARG profiles in estuarine sediments.



Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study

Yi-Yun Liu, Yang Wang*, Timothy R Walsh, Ling-Xian Yi, Rong Zhang, James Spencer, Yohei Doi, Guobao Tian, Baolei Dong, Xianhui Huang, Lin-Feng Yu, Danxia Gu, Hongwei Ren, Xiaojie Chen, Luchao Lv, Dandan He, Hongwei Zhou, Zisen Liang, Jian-Hua Liu, Jianzhong Shen*

Summary

Background Until now, polymyxin resistance has involved chromosomal mutations but has never been reported via horizontal gene transfer. During a routine surveillance project on antimicrobial resistance in commensal *Escherichia coli* from food animals in China, a major increase of colistin resistance was observed. When an *E coli* strain, SHP45, possessing colistin resistance that could be transferred to another strain, was isolated from a pig, we conducted further analysis of possible plasmid-mediated polymyxin resistance. Herein, we report the emergence of the first plasmid-mediated polymyxin resistance mechanism, MCR-1, in Enterobacteriaceae.

Lancet Infect Dis 2016; 16: 161–68

Published Online November 18, 2015 http://dx.doi.org/10.1016/S1473-3099(15)00424-7

See Comment page 132

- We observed *mcr-1* carriage in *E coli* isolates collected from 78 (15%) of 523 samples of raw meat and 166 (21%) of 804 animals during 2011–14, and 16 (1%) of 1322 samples from inpatients with infection.

Journal of Travel Medicine

International Society of Travel Medicine
Established 1991
Promoting healthy travel worldwide

Journal of Travel Medicine, 2017, Vol 24, Suppl 1, S63–S80
doi: 10.1093/jtm/tax026
Original Article

Original Article

Guidelines for the prevention and treatment of travelers' diarrhea: a graded expert panel report

Mark S. Riddle[1*†], Bradley A. Connor[2*†], Nicholas J. Beeching[3], Herbert L. DuPont[4], Davidson H. Hamer[5], Phyllis Kozarsky[6], Michael Libman[7], Robert Steffen[8], David Taylor[9], David R. Tribble[10], Jordi Vila[11], Philipp Zanger[12], and Charles D. Ericsson[13]

Review on Antimicrobial Resistance
Tackling drug-resistant infections globally

TACKLING DRUG-RESISTANT INFECTIONS GLOBALLY:
FINAL REPORT AND RECOMMENDATIONS

THE REVIEW ON ANTIMICROBIAL RESISTANCE
CHAIRED BY JIM O'NEILL

MAY 2016

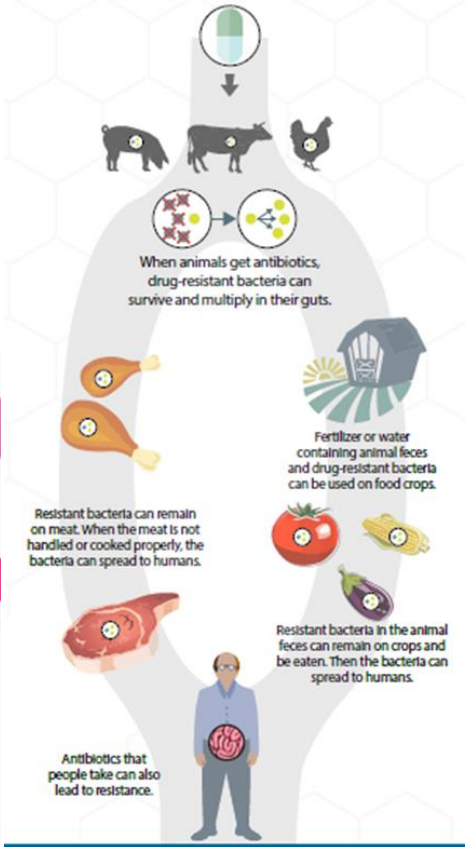
GLOBAL ACTION PLAN
ON ANTIMICROBIAL RESISTANCE

World Health Organization

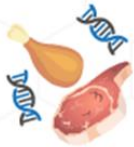
Antibiotic Resistance (AR) Solutions Initiative

Resistance to important antibiotics for human health is increasing.
In the U.S., an estimated 400,000 people are sickened with resistant *Campylobacter* or *Salmonella* every year.

Some resistant infections can come from the food we eat.



How will CDC's Solutions Initiative fight foodborne infections?



Detect and describe resistant bacteria rapidly.
Increase state laboratory capacity to rapidly uncover foodborne drug-resistant bacteria, including *Campylobacter* and *Salmonella*, using whole genome sequencing (WGS).

Find outbreaks faster by increasing lab testing.
Test every *Salmonella* isolate for drug resistance.

Improve health outcomes.
With increased lab capacity, track and investigate life-threatening *Salmonella* infections to prevent outbreaks and provide rapid response.

Promote responsible antibiotic use in food-producing animals.
Ensure practicing veterinarians have the tools, information, and training to prevent drug resistance by promoting responsible use of antibiotics.

Using antibiotics—in people or in animals—can create drug resistance.
Antibiotics should be used responsibly.
www.cdc.gov/drugresistance

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Antimicrobial Resistance

BE ANTIBIOTICS AWARE

SMART USE, BEST CARE

EXPANDED MISSION

HUMAN VACCINES & IMMUNOTHERAPEUTICS
2017, VOL. 13, NO. 5, 972–980
http://dx.doi.org/10.1080/21645515.2016.1274473

Taylor & Francis
Taylor & Francis Group

RESEARCH PAPER

OPEN ACCESS

Persistence of antibodies 20 y after vaccination with a combined hepatitis A and B vaccine

Pierre Van Damme[a], Geert Leroux-Roels[b], P. Suryakiran[c], Nicolas Folschweiller[d], and Olivier Van Der Meeren[d]

[a]Centre for the Evaluation of Vaccination, Vaccine and Infectious Disease Institute, University of Antwerp, Antwerp, Belgium; [b]Center for Vaccinology, Ghent University Hospital, Ghent, Belgium; [c]GSK Pharmaceuticals, Mumbai, India; [d]GSK Vaccines, Wavre, Belgium

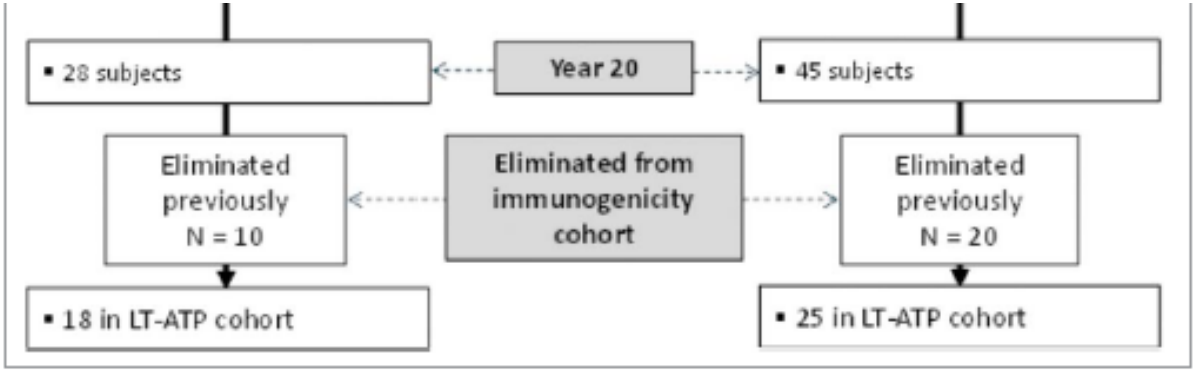


Figure 1. Subject disposition. LT-ATP: Long-term according-to-protocol (The LT-ATP cohort for immunogenicity included all subjects who were included in the ATP immunogenicity analysis in the primary study, for whom serology results were available for that blood sampling visit and who had not been eliminated due to any protocol violations).

ORIGINAL ARTICLE

Persistence of antibody to Hepatitis A virus 20 years after receipt of Hepatitis A vaccine in Alaska

I. D. Plumb ✉, L. R. Bulkow, M. G. Bruce, T. W. Hennessy, J. Morris, K. Rudolph, P. Spradling, M. Snowball, B. J. McMahon

First published: 2 February 2017 Full publication history

View issue TOC
Volume 24, Issue 7
July 2017
Pages 608–612

Conclusions

- HBV breaktrough in vax (6,48%)
- Chronic HBV infection (22 : 8850 soit 0,25 % vs 28 : 936 soit 3,0 %)(but no HBV DNA at entry)
- Booster effect subtle if mother Ag HBs (-)
- **Suggestion** booster
  - if born mother Ag HBs (+)
  - lost anti HBs < 10 UI/ml
  - HBV endemicity
- To follow

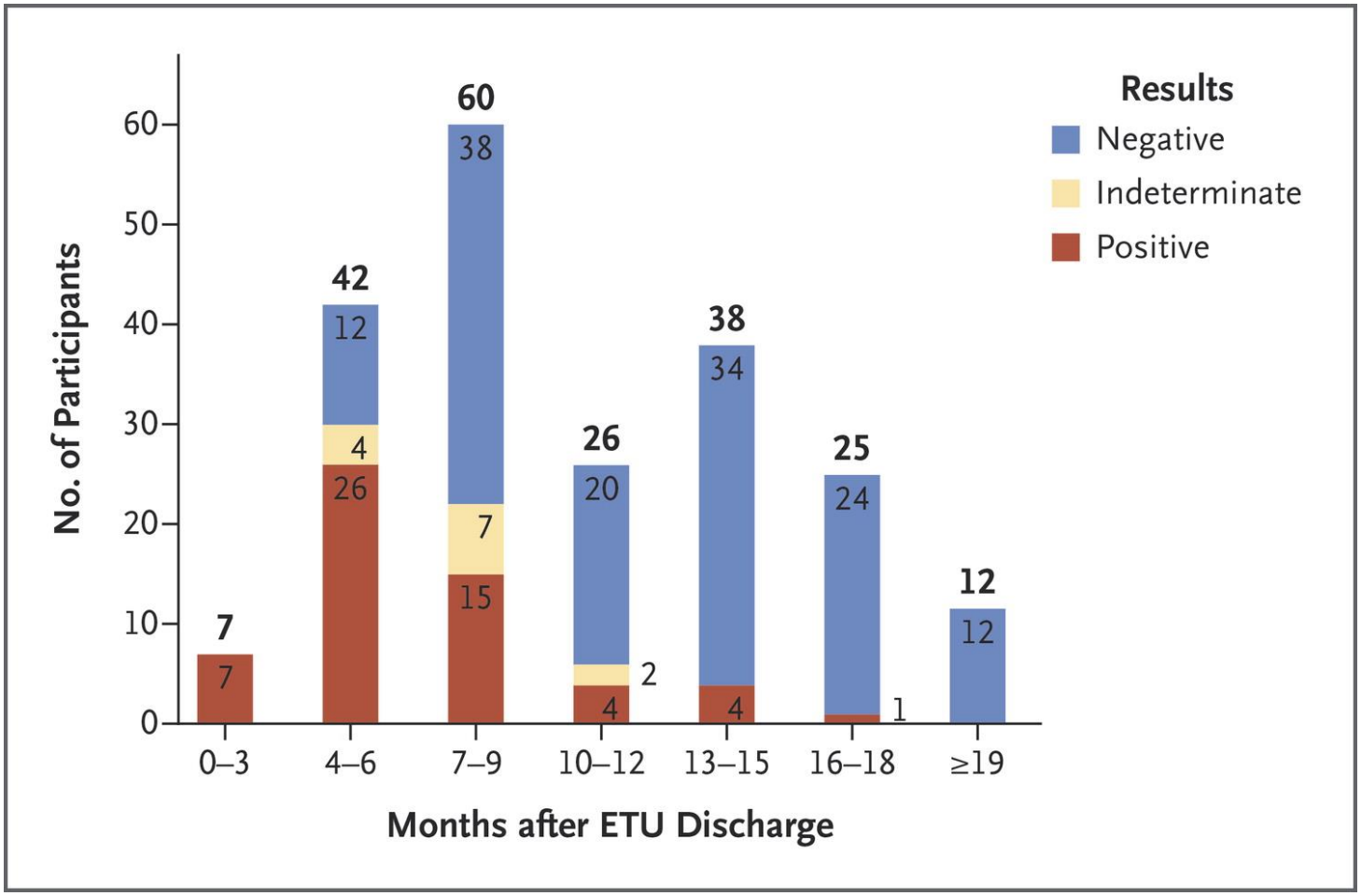
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Ebola RNA Persistence in Semen of Ebola Virus Disease Survivors — Final Report

G.F. Deen, N. Broutet, W. Xu, B. Knust, F.R. Sesay, S.L.R. McDonald, E. Ervin.

N Engl J Med 2017;377:1428-37.

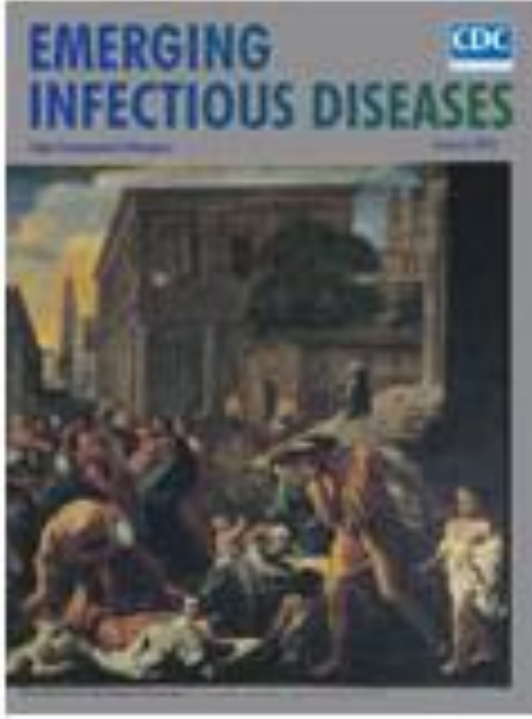


N Engl J Med 2017;377:1428-37.

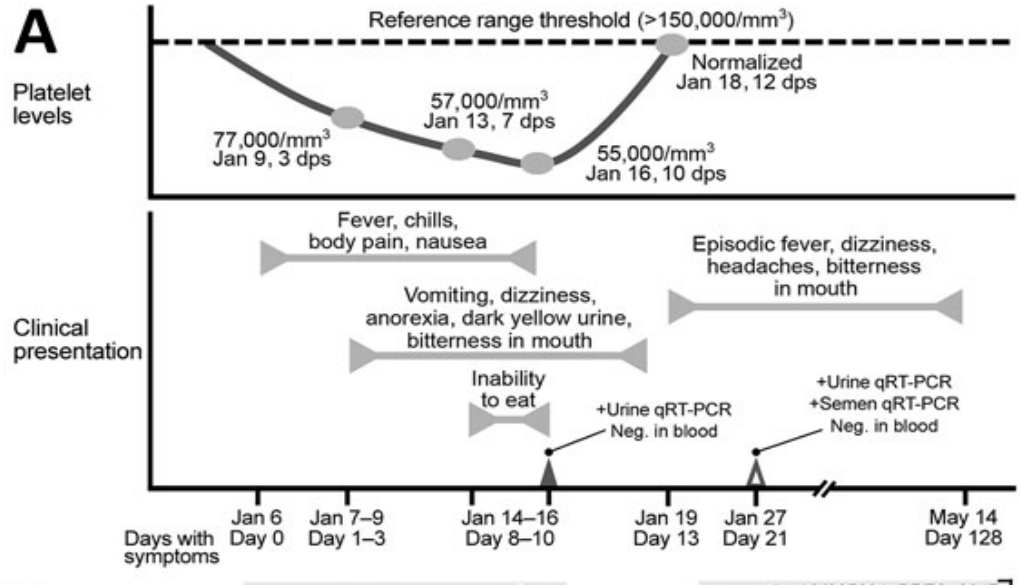
Yellow Fever Virus DNA in Urine and Semen of Convalescent Patient, B

Carla M. Barbosa[12], Nicholas Di Paola[1], Marielton P. Cunha[1], Mônica J. Rodrigues-Jesus, Danielle B. Araujo, Vanessa B
Flávio S. Mesquita, Viviane F. Botosso, Paolo M.A. Zanotto, Edison L. Durigon, Marcos V. Silva, and Danielle B.L. Olivei
Author affiliations: University of São Paulo, São Paulo, Brazil (C.M. Barbosa, N. Di Paolo, M.P. Cunha, M.J. Rodrigues-Jesus, Leal, F.S. Mesquita, P.M.A. Zanotto, E.L. Durigon, D.B.L. Oliveira); Butantan Institute, São Paulo (V.F. Botosso); Institute of I Paulo (M.V. Silva); Pontifical Catholic University, São Paulo (M.V. Silva)

Main Article



Figure



Urine as Sample Type for Molecular Diagnosis of Natural Yellow Fever Virus Infections

J. Clin. Microbiol. November 2017 55:11 3294–3296; Accepted manuscript

Animal rabies

First bat rabies case in Belgium (28/9/2016)
World Rabies Day