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Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Fang L-Q, Sun Y, Zhao G-P, et al. Travel-related infections in mainland China, 2014–16: an active surveillance study. *Lancet Public Health* 2018; published online July 19. [http://dx.doi.org/10.1016/S2468-2667\(18\)30127-0](http://dx.doi.org/10.1016/S2468-2667(18)30127-0).

Supplementary appendix

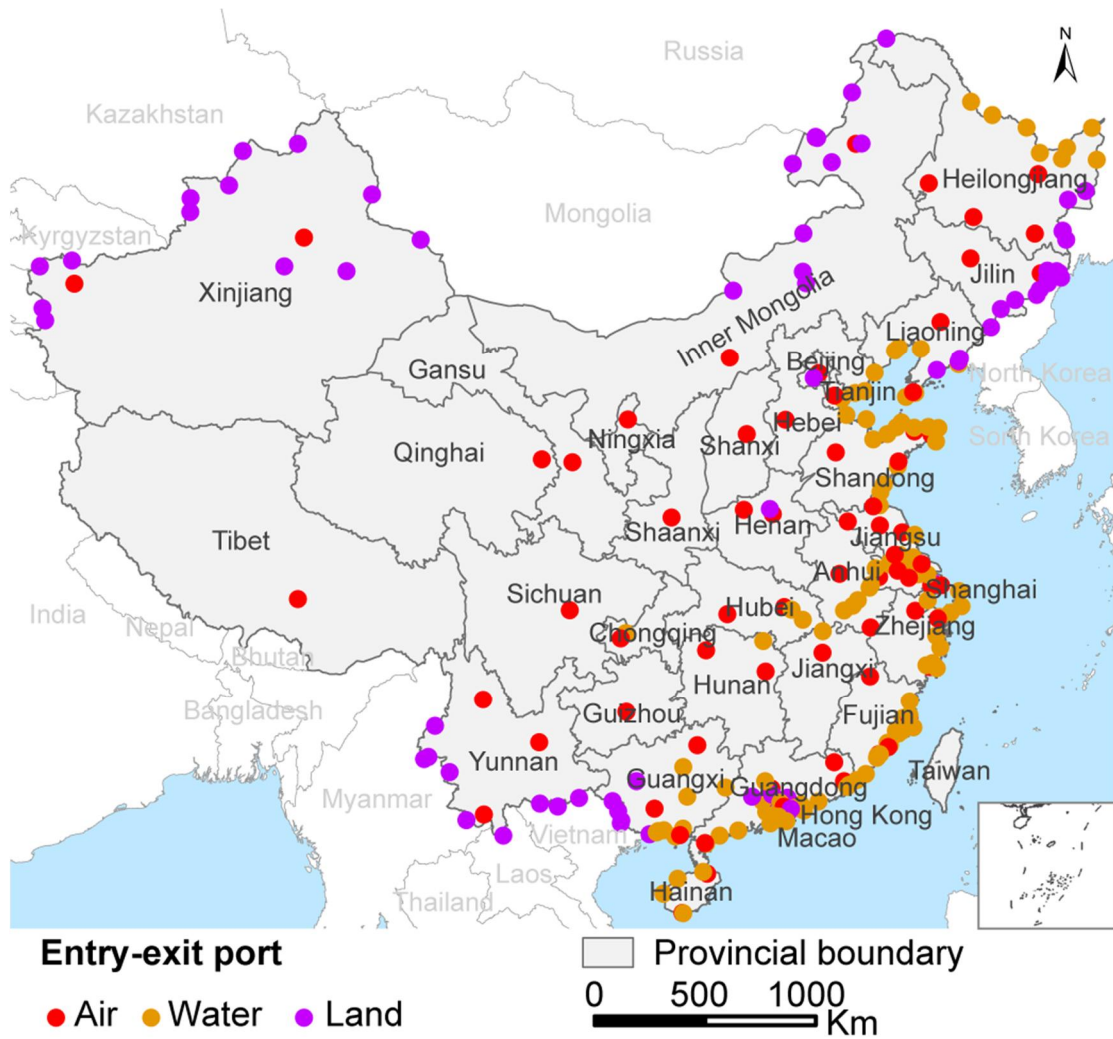
Supplement to: Travel-related infections in mainland China from 2014 to 2016: an active surveillance study.

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Figure S1: The distribution of all 272 entry-exit ports in mainland China

The red, brown and purple points indicate the airports, water ports and land entry-exit stations, respectively.



Supplementary methods

Case-finding approaches included fever screening, medical inspection, self-declaration, and reporting of on-board staff. Fever screening was conducted by using infrared thermometers or thermal imaging. Medical inspection was performed by a quarantine officer when passengers passed quarantine stations to look for any symptoms of a problem, such as jaundice, scars, rashes, swelling, shaking, skin discoloration, vomiting, forced posture, painful expression, etc. Passengers who came from any endemic areas and felt ill were required to report their illness to the officer at quarantine stations of entry-exit ports. The staff on-board are responsible for reporting to the officers at quarantine stations of entry-exit ports once they noticed passengers suspected for an infection during the travelling. All these suspected cases were required to be quarantined according to the International Health Regulations issued by the World Health Organization and the Frontier Health and Quarantine Law of China.

Figure S2: Informed consent form provided by each participant

JLWSC041 采样知情同意书

采样知情同意书

旅客您好：

由于您/您的被监护人/您的同伴出现了以下一种或多种的症状：发热、咳嗽、呕吐、腹泻、肌肉痛等，检疫人员怀疑您/您的被监护人可能感染了传染病。为了保护您/您的被监护人及他人的身体健康，检疫人员需要从您/您的被监护人身上采集血液等样本进行实验室检测，以排查传染病。

如果您阅读、理解了以上内容，并愿意配合采样工作，请在下方签名以表示同意。

感谢您的合作！

入境旅客已发放就诊方便卡。 旅客姓名：
日期：

Informed consent for sampling

Dear passenger:

Because you/your ward/your accompanier have one or more symptoms as follows: fever, cough, vomit, diarrhea, myalgia and so on, quarantine officials doubt that you/your ward may be infected with some kind of infectious disease. In order to protect your/your ward's and other persons' health, quarantine officials need to take blood or other samples for the related lab tests.

If you understand the above contents and would like to cooperate with quarantine officials in sampling, please sign below.

Thank you for your cooperation!

Name:
Date:

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Table S1: Infections and their specific laboratory tests recommended by AQSIQ

AQSIQ=the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China. Travel-related infections are divided into five categories in this study according to the main transmission route of pathogens, including respiratory, gastrointestinal, vector-borne, blood- and sex- transmitted, and mucocutaneous. Respiratory infections indicate those transmitted mainly by droplets, droplet nucleus, dust, or aerosols; gastrointestinal infections indicate those mainly transmitted by patient's excrement (e.g., vomit and feces, etc.); vector-borne infections indicate those mainly transmitted by arthropods (e.g., mosquitoes and chigger, etc.); blood- and sex- transmitted infections indicate those mainly transmitted by blood transfusion or sexual contact; mucocutaneous infections indicate those mainly transmitted by mucous membranes or skin contact.

Infections*	Specific laboratory tests†
Respiratory	
Influenza	Real-time RT-PCR
Chickenpox	Real-time PCR
Pneumococcal infection	Real-time PCR/Isolation and culture
Mumps	Real-time PCR/ELISA
Scarlet fever	Colloidal gold method/Isolation and culture
Rubella	Real-time RT-PCR/ELISA
Tuberculosis	Real-time PCR/Sputum smear microscope
Measles	Real-time RT-PCR
Mycoplasma pneumonia	Real-time PCR
Infection with adenovirus	Real-time RT-PCR
Infection with syncytial virus	Real-time RT-PCR
Parainfluenza	Real-time RT-PCR
Infection with metapneumovirus	Real-time RT-PCR
Infection with rhinovirus	Real-time RT-PCR
Coronavirus infection	Real-time RT-PCR
Other respiratory infections	
Chlamydia pneumonia	Real-time PCR
<i>legionella pneumophila</i>	Real-time PCR
Bocavirus	Real-time RT-PCR
Gastrointestinal	
Bacillary dysentery	Real-time PCR/Isolation and culture
Typhoid and Paratyphoid	Real-time PCR/Isolation and culture
Hepatitis A	ELISA
Amebic dysentery	Real-time PCR/Isolation and culture/Faeces smear
Norovirus infection	Real-time RT-PCR
Cholera	Real-time PCR/Isolation and culture
Other infectious diarrhea	
Rotavirus	Real-time RT-PCR
<i>Escherichia coli</i> O157:H7	Real-time PCR/Isolation and culture
Vibrio Parahemolyticus	Real-time PCR/Isolation and culture
Staphylococcus aureus	Real-time PCR
Vector-borne	
Malaria	Real-time PCR/Colloidal gold method/Slide review
Dengue	Real-time RT-PCR
Chikungunya	Real-time RT-PCR

Scrub typhus	Colloidal gold method
Zika virus disease	Real-time RT-PCR
Rift Valley fever	Real-time RT-PCR
Yellow fever	Real-time RT-PCR
Blood- and sex-transmitted	
Hepatitis B	ELISA
Hepatitis C	ELISA
Syphilis	TRUST/TPPA
HIV infection	ELISA/WB/RIBA
Other blood- and sex-transmitted diseases	
Gonorrhea	Real-time PCR
Papillomavirus infection	Real-time PCR
Genital chlamydial infection	Real-time PCR
Mucocutaneous	
Hand-foot-mouth disease	Real-time RT-PCR
Acute conjunctivitis	Real-time RT-PCR
Herpes zoster	Real-time PCR

*These 23 infectious diseases, including plague, anthrax, Japanese encephalitis, Lassa fever, Middle East respiratory syndrome, Hepatitis E, Meningococcal infection, no-typhoidal Salmonellosis, severe fever with thrombocytopenia syndrome bunyavirus, leptospirosis, filariasis, leishmaniasis, trypanosomiasis, bartonellosis, infectious diarrhea infected with Astrovirus, Calicivirus, Sapovirus, West Nile fever, brucellosis, infection mononucleosis, lymphogranuloma venereum, poliomyelitis and tubercular meningitis were also tested etiologically if necessary at this active surveillance system by using real-time RT-PCR, real-time PCR, ELISA, isolated and culture, slide review, and colloidal gold method. No patients were detected or reported during 2014–16.

†PCR=polymerase chain reaction. RT-PCR=reverse transcription-polymerase chain reaction.
 ELISA=enzyme-linked immunosorbent assay. TRUST=tolulized red unheated serum test.
 TPPA=treponema pallidum particle assay. WB=western blot. RIBA=recombinant immunoblot assay.

Figure S3: The proportion of each specific infection by exposure regions in 2014–16

Global exposure regions referred to the WHO-designated regions (<http://www.who.int>). ORI=other respiratory infections including chlamydia pneumonia, *legionella pneumophila* or Bocavirus. OID=other infectious diarrhea caused by Rotavirus, *Escherichia coli* O157:H7, *Vibrio Parahemolyticus* or *Staphylococcus aureus*. OBSTD=other blood- and sex-transmitted diseases including gonorrhea, papillomavirus infection or genital chlamydial infection.

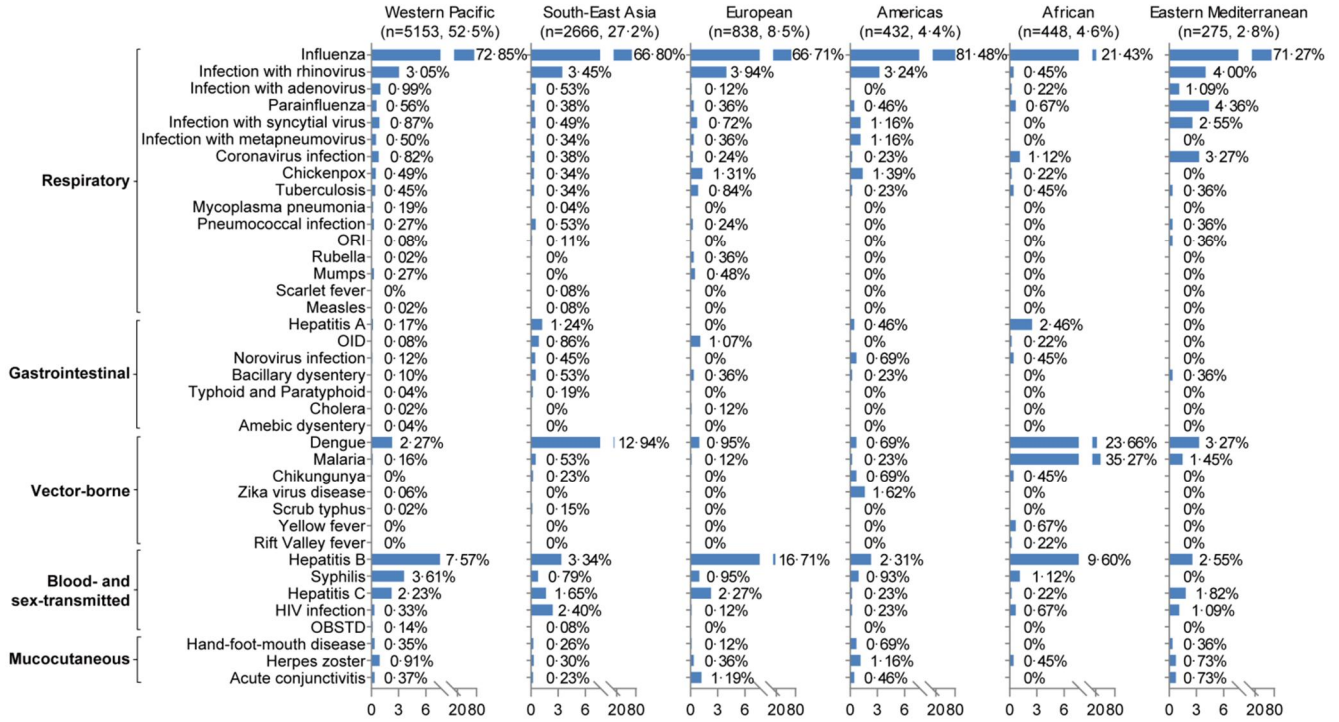


Figure S4: Seasonal variation of travel-related infections in international and HMT travel groups
 RI=respiratory infections. GI=gastrointestinal infections. VBI=vector-borne infections. BSTI=blood- and sex-transmitted infections. MI=mucocutaneous infections.

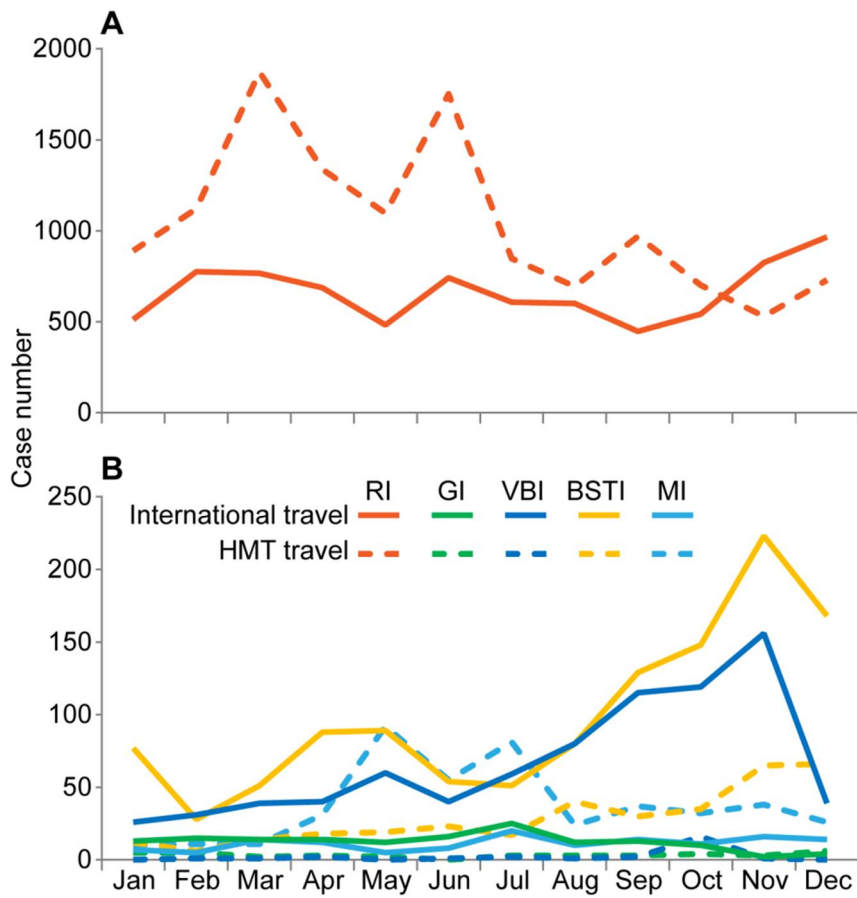


Table S2: Clinical manifestations of each travel-related infection

ORI=other respiratory infections including chlamydia pneumonia, *legionella pneumophila* or Bocavirus. OID=other infectious diarrhea caused by Rotavirus, *Escherichia coli* O157:H7, *Vibrio Parahaemolyticus* or *Staphylococcus aureus*. OBSTD=other blood- and sex-transmitted diseases including gonorrhea, papillomavirus infection or genital chlamydial infection.

Infections	No. of cases	Male (%)	Age, median (Range)	Clinical manifestations (%)												
				Fever	Chills	Cough	Chest pain	Vomit	Diarrhea	Abdominal pain	Headache	Muscle pain	Arthralgia	Flushed face	Rash	Jaundice
Respiratory	19662	66.8%	30 (1-93)	84.3%	11.4%	47.1%	0.5%	0.6%	0.7%	0.4%	15.8%	3.9%	2.1%	5.8%	0.7%	0.2%
Influenza	17487	66.5%	31 (1-93)	85.3%	12.0%	47.5%	0.4%	0.5%	0.6%	0.4%	16.3%	4.2%	2.3%	5.6%	0.3%	0.1%
Infection with rhinovirus	801	67.2%	25 (1-84)	72.0%	7.6%	44.8%	0.5%	1.2%	0.9%	0.2%	16.1%	1.6%	0.5%	8.0%	0.1%	0.0%
Infection with adenovirus	298	69.8%	4 (1-65)	90.6%	5.4%	34.6%	0.3%	2.7%	2.0%	1.0%	5.4%	0.7%	0.0%	3.7%	0.0%	0.0%
Parainfluenza	234	69.2%	4 (1-66)	85.5%	5.1%	43.2%	0.9%	1.3%	1.7%	0.0%	5.1%	1.3%	0.0%	3.8%	0.0%	0.0%
Infection with syncytial virus	201	68.7%	4 (1-72)	79.6%	5.0%	51.2%	0.5%	0.5%	1.0%	0.0%	13.4%	0.0%	0.0%	5.0%	0.5%	0.5%
Infection with metapneumovirus	187	64.7%	4 (1-70)	86.6%	3.7%	59.4%	0.0%	0.0%	0.0%	0.0%	2.7%	1.1%	0.5%	7.5%	0.5%	0.5%
Coronavirus infection	151	76.2%	21 (1-83)	80.8%	5.3%	37.7%	1.3%	0.0%	0.7%	0.0%	15.9%	0.7%	0.7%	10.6%	0.7%	0.0%
Chickenpox	80	71.3%	25 (2-60)	58.8%	15.0%	8.8%	1.3%	0.0%	2.5%	1.3%	18.8%	6.3%	3.8%	7.5%	73.8%	0.0%
Tuberculosis	50	78.0%	43 (15-73)	30.0%	6.0%	64.0%	20.0%	2.0%	0.0%	18.0%	10.0%	6.0%	0.0%	16.0%	2.0%	6.0%
Mycoplasma pneumonia	46	63.0%	5 (2-73)	80.4%	2.2%	50.0%	0.0%	0.0%	0.0%	0.0%	2.2%	0.0%	0.0%	4.3%	0.0%	0.0%
Pneumococcal infection	38	60.5%	45 (3-87)	13.2%	15.8%	34.2%	7.9%	5.3%	2.6%	5.3%	26.3%	2.6%	0.0%	18.4%	5.3%	0.0%
ORI*	35	68.6%	3 (1-41)	82.9%	0.0%	51.4%	0.0%	2.9%	2.9%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%	0.0%
Rubella	22	90.9%	49 (24-65)	13.6%	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	86.4%	4.5%
Mumps	21	81.0%	10 (3-40)	33.3%	23.8%	38.1%	0.0%	0.0%	4.8%	0.0%	23.8%	19.0%	9.5%	14.3%	4.8%	0.0%
Scarlet fever	6	(4/6)	8 (3-66)	(5/6)	(0/6)	(2/6)	(0/6)	(0/6)	(0/6)	(0/6)	(1/6)	(0/6)	(0/6)	(2/6)	(3/6)	(0/6)
Measles	5	(4/5)	25 (2-39)	(4/5)	(0/5)	(1/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(2/5)	(0/5)
Gastrointestinal	189	61.4%	33 (1-72)	28.6%	7.9%	1.6%	0.5%	20.6%	43.9%	27.5%	4.8%	2.1%	0.5%	3.7%	1.1%	3.7%
Hepatitis A	55	67.3%	42 (21-60)	1.8%	1.8%	0.0%	1.8%	0.0%	0.0%	5.5%	0.0%	0.0%	0.0%	3.6%	0.0%	12.7%
OID*	48	50.0%	35 (1-72)	25.0%	12.5%	2.1%	0.0%	29.2%	68.8%	43.8%	6.3%	2.1%	0.0%	2.1%	0.0%	0.0%
Norovirus infection	47	61.7%	27 (1-58)	48.9%	6.4%	2.1%	0.0%	36.2%	51.1%	25.5%	4.3%	2.1%	2.1%	4.3%	0.0%	0.0%

Bacillary dysentery	24	70.8%	38 (2-58)	50.0%	16.7%	0.0%	0.0%	20.8%	79.2%	54.2%	12.5%	8.3%	0.0%	8.3%	4.2%	0.0%
Typhoid and Paratyphoid	8	(5/8)	29 (1-57)	(2/8)	(0/8)	(1/8)	(0/8)	(1/8)	(3/8)	(1/8)	(1/8)	(0/8)	(0/8)	(0/8)	(1/8)	(0/8)
Cholera	5	(2/5)	36 (8-65)	(4/5)	(1/5)	(0/5)	(0/5)	(2/5)	(2/5)	(1/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)
Amebic dysentery	2	(2/2)	11 (1-21)	(0/2)	(0/2)	(0/2)	(0/2)	(0/2)	(2/2)	(1/2)	(0/2)	(0/2)	(0/2)	(0/2)	(0/2)	(0/2)
Vector-borne	831	79.4%	34 (1-74)	71.0%	26.2%	12.5%	1.2%	6.4%	3.6%	2.4%	43.6%	24.9%	19.1%	10.6%	5.3%	1.6%
Dengue	613	75.2%	32 (1-74)	71.9%	24.1%	13.9%	1.1%	5.7%	3.9%	2.6%	45.4%	27.9%	20.4%	12.1%	6.4%	0.5%
Malaria	188	92.0%	40 (17-69)	69.1%	34.0%	10.1%	1.6%	8.5%	2.7%	1.6%	37.2%	17.6%	15.4%	5.9%	1.1%	4.3%
Chikungunya	11	100.0%	30 (14-54)	100.0%	36.4%	0.0%	0.0%	0.0%	0.0%	0.0%	36.4%	9.1%	18.2%	9.1%	0.0%	0.0%
Zika virus disease	10	80.0%	30 (6-40)	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	20.0%	0.0%
Scrub typhus	5	(3/5)	34 (5-49)	(3/5)	(1/5)	(0/5)	(0/5)	(0/5)	(0/5)	(0/5)	(3/5)	(1/5)	(1/5)	(2/5)	(1/5)	(0/5)
Yellow fever	3	(3/3)	45 (30-51)	(1/3)	(1/3)	(0/3)	(0/3)	(1/3)	(1/3)	(1/3)	(2/3)	(1/3)	(1/3)	(0/3)	(0/3)	(1/3)
Rift Valley fever	1	(1/1)	46	(0/1)	(0/1)	(0/1)	(0/1)	(1/1)	(0/1)	(0/1)	(0/1)	(0/1)	(1/1)	(0/1)	(0/1)	(1/1)
Blood- and sex-transmitted	1531	78.2%	39 (2-94)	19.0%	2.2%	10.5%	1.0%	4.1%	3.2%	11.0%	8.7%	2.6%	2.5%	11.3%	3.3%	20.2%
Hepatitis B	943	78.3%	38 (2-94)	15.4%	2.0%	8.6%	1.0%	4.8%	3.9%	13.9%	6.3%	2.4%	1.8%	8.1%	1.9%	24.1%
Syphilis	255	78.4%	45 (20-79)	18.4%	0.8%	10.6%	0.0%	0.0%	0.8%	0.8%	8.2%	0.4%	2.4%	18.4%	9.4%	7.8%
Hepatitis C	230	81.3%	40 (18-74)	29.1%	2.6%	14.3%	1.7%	6.5%	2.2%	13.5%	16.1%	4.8%	6.1%	16.5%	2.6%	26.5%
HIV infection	94	71.3%	36 (10-68)	33.0%	6.4%	20.2%	3.2%	3.2%	5.3%	3.2%	17.0%	5.3%	2.1%	11.7%	2.1%	1.1%
OBSTD*	9	(6/9)	25 (23-43)	(1/9)	(0/9)	(1/9)	(0/9)	(0/9)	(0/9)	(2/9)	(0/9)	(0/9)	(0/9)	(1/9)	(1/9)	(1/9)
Mucocutaneous	584	75.2%	5 (1-75)	70.5%	2.6%	18.2%	1.0%	0.5%	0.3%	0.0%	4.3%	0.7%	0.2%	4.1%	11.0%	0.3%
Hand-foot-mouth disease	406	70.7%	4 (1-61)	92.9%	1.2%	19.7%	0.2%	0.5%	0.5%	0.0%	2.2%	0.0%	0.0%	2.0%	2.2%	0.2%
Herpes zoster	103	85.4%	37 (1-71)	31.1%	7.8%	20.4%	4.9%	1.0%	0.0%	0.0%	12.6%	3.9%	1.0%	14.6%	53.4%	1.0%
Acute conjunctivitis	75	85.3%	38 (5-75)	4.0%	2.7%	6.7%	0.0%	0.0%	0.0%	0.0%	4.0%	0.0%	0.0%	1.3%	0.0%	0.0%
Total	22797	68.2%	30 (1-94)	78.6%	11.1%	42.2%	0.5%	1.2%	1.3%	1.4%	15.9%	4.5%	2.7%	6.2%	1.3%	1.6%