WHO Collaborating Centre for Travellers' Health

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Zentrum für Reisemedizin
der Universität Zürich

EBPI

University of Zurich UZH

A NEW FRONTIER - INFECTION TRACKING IN TRAVELLERS (ITIT) THE FIRST 500 PARTICIPANTS

ITIT

AUTHORS

N. Hedrich 1*, T. Lovey 1*, J. Bernhard 2, A. de Frey 3, P. Gautret 4, M.P. Grobusch 5, The ITIT Global Network 6, P. Schlagenhauf 1,7

*joint first author
1. University of Zurich, Epidemiology, Biostatistics and Prevention Institute, Zurich, Switzerland,
2. Charité-Universitaetsmedizin Berlin, Charité Center for Global Health, Institute of International Health, Berlin, Germany,
3. University of Witwatersrand, South African Society of Travel Medicine, Johannesburg, South Africa,
4. IHU - Méditerranée Infection, Marseille, France,
5. Center for Tropical Medicine and Travel Medicine, Department of Infectious Diseases, Division of Internal Medicine, AMC, Amsterdam, Netherlands,
6. U. Blanke, V. D'Acremont, G. Epéron, A. Filali, E. Kuenzli, A. Lindner, C. Popescu
7. WHO Collaborating Centre for Travellers' Health, Department of Global and Public Health, MilMedBiol Competence Centre, Zürich, Switzerland

ITIT
ILLNESS TRACKING IN TRAVELLERS

Healthy Travel Needs Your Story!

Are you:
- An adult (>18)
- Travelling internationally for more than two days?

THEN TAKE PART IN A SURVEY TO HELP DETECT OUTBREAKS.

How can YOU take part?

- Download the "ITIT Travelhealth" App/ Scan the QR codes
- Press the yellow button on the home screen to complete the consent form and baseline questionnaire
- Complete the daily survey on travel illness

App Store | Google Play

GET USEFUL TRAVEL HEALTH INFORMATION FROM THE WORLD HEALTH ORGANIZATION (WHO).

Learn more at www.itit-travelhealth.org

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OBJECTIVE

To record and evaluate illness in travellers using self-reported symptom information collated using a mobile app-based system called ITIT (Illness Tracking in Travellers).

METHODOLOGY

- Novel ITIT app developed to
  - Record travel-related symptoms
  - Record related location and environmental data
- Participants recruited via travel clinics throughout Europe and South Africa starting in April 2022
- Data from the app are used to examine the epidemiology of travel-related illness - linked to geolocation
- Future goal is outbreak detection and real-time surveillance of infection hotspots with artificial intelligence
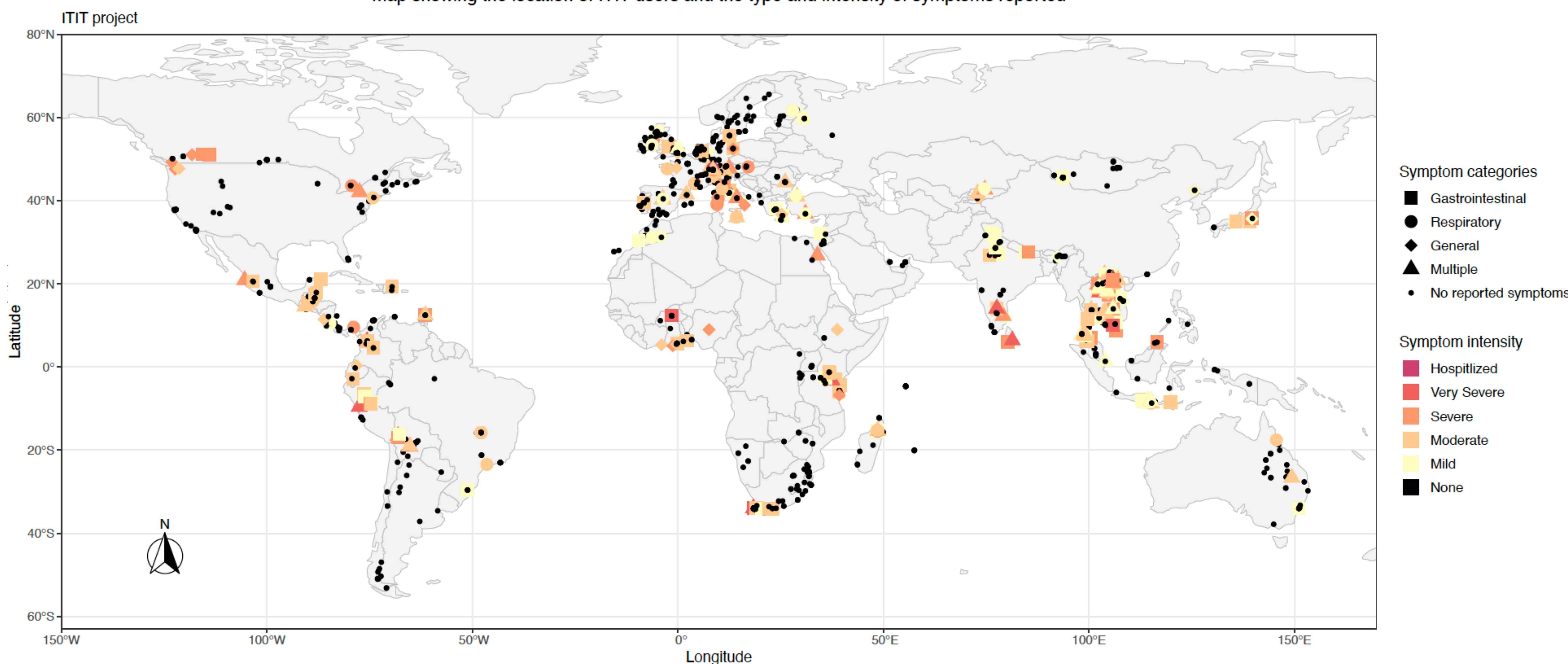
RESULTS/FINDINGS

Table 1. Absolute number and incidence rate of symptoms reported by travellers using the ITIT app, stratified by location of travel and gender.

Symptoms	Overall (N=2365)[a]		Africa (N=475)[a]		Americas (N=573)[a]		Asia (N=537)[a]		Europe (N=729)[a]		Oceania (N=51)[a]		Female (N=1352)[a]		Male (N=1013)[a]	
	n[b]	IR[c]	n[b]	IR	n[b]	IR	n[b]	IR	n[b]	IR	n[b]	IR	n[b]	IR	n[b]	IR
gastrointestinal	197	69.27	36	60.10	43	62.05	106	143.05	11	15.07	1	18.52	130	63.60	67	51.98
nausea	85	29.89	20	33.39	13	18.76	51	68.83	1	1.37	0	0.00	68	43.73	17	13.19
vomiting	13	4.57	2	3.34	5	7.22	6	8.10	0	0.00	0	0.00	8	5.14	5	3.88
stomach pain	112	39.38	24	40.07	26	37.52	57	76.92	4	5.48	1	18.52	72	46.30	40	31.03
diarrhea	154	54.15	30	50.08	39	56.28	77	103.91	8	10.96	0	0.00	93	59.81	61	47.32
constipation	37	13.01	2	3.34	4	5.77	28	37.79	3	4.11	0	0.00	25	16.08	12	9.31
respiratory	135	47.47	11	18.36	20	28.86	44	59.38	58	79.45	2	37.04	82	52.73	53	41.12
cough	103	36.22	7	11.69	16	23.09	34	45.88	44	60.27	2	37.04	61	39.23	42	32.58
sore throat	79	27.78	3	5.01	6	8.66	24	32.39	46	63.01	0	0.00	54	34.73	25	19.39
runny nose	102	35.86	8	13.36	15	21.65	35	47.23	42	57.53	2	37.04	58	37.30	44	34.13
out of breath (resting)	17	5.98	0	0.00	4	5.77	1	1.35	12	16.44	0	0.00	11	7.07	6	4.65
out of breath (running)	42	14.77	4	6.68	9	12.99	7	9.45	22	30.14	0	0.00	30	19.29	12	9.31
dermatologic	56	19.69	0	0.00	2	2.89	47	63.43	6	8.22	1	18.52	46	29.58	10	7.76
rash	27	9.49	0	0.00	1	1.44	23	31.04	2	2.74	1	18.52	24	15.43	3	2.33
insect bite	36	12.66	0	0.00	1	1.44	28	37.79	6	8.22	1	18.52	27	17.36	9	6.98
other itching	9	3.16	0	0.00	1	1.44	6	8.10	1	1.37	1	18.52	6	3.86	3	2.33
sunburn	18	6.33	0	0.00	0	0.00	18	24.29	0	0.00	0	0.00	12	7.72	6	4.65
itchy/red eyes	7	2.46	0	0.00	0	0.00	6	8.10	1	1.37	0	0.00	6	3.86	1	0.78
general	108	37.97	14	23.37	14	20.20	49	66.13	31	42.47	0	0.00	73	46.95	35	27.15
fever	37	13.01	3	5.01	6	8.66	12	16.19	16	21.92	0	0.00	28	18.01	9	6.98
dizziness	49	17.23	2	3.34	7	10.10	24	32.39	16	21.92	0	0.00	33	21.22	16	12.41
earache	17	5.98	0	0.00	2	2.89	5	6.75	10	13.70	0	0.00	14	9.00	3	2.33
headache	71	24.96	7	11.69	10	14.43	31	41.84	23	31.51	0	0.00	48	30.87	23	17.84
pain eyes	28	9.85	6	10.02	4	5.77	10	13.50	8	10.96	0	0.00	16	10.29	12	9.31
muscle pain	33	11.60	4	6.68	7	10.10	12	16.19	10	13.70	0	0.00	19	12.22	14	10.86
aching limbs	40	14.06	4	6.68	7	10.10	18	24.29	11	15.07	0	0.00	24	15.43	16	12.41
other pain	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
joint pain	26	9.14	9	15.03	1	1.44	13	17.54	3	4.11	0	0.00	18	11.58	8	6.21
swelling in the joints	7	2.46	3	5.01	1	1.44	2	2.70	1	1.37	0	0.00	6	3.86	1	0.78
location swelling	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

A. ABSOLUTE NUMBER OF SURVEYS COMPLETED
B. ABSOLUTE NUMBER OF REPORTED SYMPTOMS
C. INCIDENCE RATE PER 1000 COMPLETED SURVEYS

Map showing the location of ITIT users and the type and intensity of symptoms reported

ITIT project

Symptom categories
- ■ Gastrointestinal
- ● Respiratory
- ◆ General
- ▲ Multiple
- • No reported symptoms

Symptom intensity
- Hospitlized
- Very Severe
- Severe
- Moderate
- Mild
- None

RESULTS/FINDINGS

- 439 travellers recruited
  - Average age: 37
  - 54% female
  - 10% with chronic diseases
  - 1792 locations on all continents

- 2365 questionnaires completed
  - Mean travel duration of 25 days
  - Mean overall response rate 32%
  - Mean active traveller response rate 47%
  - Most common destinations: Europe (36%) and Asia (25%)

- Gastrointestinal symptoms are most common, followed by respiratory (See Table 1)

CONCLUSION

ITIT is a valuable tool to determine the epidemiology of infection in travellers, it complements existing surveillance systems, and adds a new frontier in travel medicine real-time surveillance.

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REFERENCES

Nadja Hedrich, Thibault Lovey, Esther Kuenzli, Gilles Epéron, Ulf Blanke, Patricia Schlagenhauf. Infection tracking in travellers using a mobile app (ITIT): The pilot study, Travel Medicine and Infectious Disease, Volume 52, 2023, 102526, https://doi.org/10.1016/j.tmaid.2022.102526.
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