

# **Epidemiological Update on Fever in Returning Travelers to Ontario** Toronto General Toronto Western Princess Margaret Toronto Rehab from the 'Rapid Assessment of Febrile Travelers' (RAFT) Programme



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### Introduction

- Fever in the returned traveler is a common syndrome, occurring in 17% of ill returned Canadian travelers and new immigrants presenting for care after travel<sup>1</sup>.
- Although often due to self-limited infections, such as travelers' diarrhea, fever after travel may indicate serious and potentially lifethreatening causes, such as malaria, dengue, or typhoid fever, as was the case in 28% of febrile returned Canadian travelers or new immigrants studied recently<sup>1</sup>.
- National Canadian guidelines on the assessment of febrile returned travelers have been published and have been adapted into an ED decision-algorithm to standardize the evaluation and disposition of such patients, through creation of the "Rapid Assessment of Febrile Travelers" (RAFT) Program<sup>2,3</sup>.
- The RAFT program facilitates the collection of epidemiological data regarding returning febrile travelers, to understand how destination relates to disease risk.

### Results

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#### **Table 1.** Breakdown of diagnoses of patients referred to RAFT clinic, n=482

Diagnosis	#	%	Diagnosis	#	%	Diagnosis	#	%
Gastrointestinal Syndrome	121	25.1	Respiratory Syndrome	101	21	STI / Genitourinary	18	3.7
Travelers' Diarrhea	45	9.3	Viral URTI	39	8.1	Acute HSV-1	5	1
Enteric Fever	21	3.3	Influenza	29	6	Cystitis	5	1
Salmonella typhi	15	2.9	Pneumonia	19	3.9	Pylelonephritis	4	0.8
Salmonella, non-typhoidal	4	0.8	Pharyngitis	9	1.7	Bacterial Vaginosis	1	0.2
Post Infectious IBS	12	2.5	Group A Streptococcus	7	1.5	Chlamydia	1	0.2
Gastritis	8	1.7	Haemophilus pharyngitis	1	0.2	Prostatitis	1	0.2
Campylobacteriosis	5	1	Sinusitis	2	0.4	Yeast Infection	1	0.2

# Methods

- From 2016-2018, RAFT patients were seen in the Tropical Disease Unit within 24 hours after referral from the Emergency Room where the Rapid Assessment Algorithm was followed.
- Criteria for RAFT referral include: presentation to participating EDs, reported fever, and travel outside of Canada within the past year. Exclusion criteria include *Plasmodium falciparum* malaria, and fulfillment of admission criteria such as unstable vital signs or major lab derangements.
- Epidemiological data about all returning febrile travelers including demographics, represented geographic regions, and final diagnoses were collected and analyzed using descriptive statistics.

### ALGORITHM FOR ASSESSMENT OF FEVER IN THE RETURNED TRAVELER

### INCLUSION CRITERIA:

- Patient febrile at triage or reports fever (T > 38 C)
- Travel outside Canada to tropical or developing-world setting within past year
- (Patient assessed Sunday 8 am to Friday 8 am; not weekends or holidays)

#### MINIMUM§ KEY LABORATORY INVESTIGATIONS AFTER FULL HISTORY & PHYSICAL:

Malaria screen

Blood cultures x 2

CBC; LFTs; Electrolytes; Creatinine; Urinalysis; ± Chest x-ray / NP swab





#### Figure 1. Rapid Assessment Algorithm for Fever in the Returned Traveler

+ Between Friday after 8 am and Sunday before 8 am, if the patient does NOT have P. falciparum or otherwise fulfill admission criteria, the patient should STILL be referred to GIM or ID for disposition (as per standard procedure).

§ Additional investigations should be based on clinical judgment.

\*If malaria screen is positive for P. vivax, P. ovale, or P. malariae (ie, non-P. falciparum), please initiate chloroquine therapy: 4 tablet loading dose (620 mg base), followed by 2 tablets 6 hours later. If malaria screen is positive for P. vivax & the patient traveled to Papua New Guinea or Indonesia, please initiate Malarone therapy: 4 tablets PO x 1 with food.

### Results

**Figure 1.** Distribution of regions traveled by patients referred to RAFT clinic.



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						Brucellosis	1	0.2
No Diagnosis	7	1.5				Rat Bite Fever	1	0.2

#### Figure 2. Cases of lab confirmed Influenza A & B in RAFT Patients



# Percentage of Cases

## **Summary and Conclusions**

- Understanding the risk of disease and how it corresponds to geographic location travelled is critical in the evaluation of a febrile returned traveler as it will inform decision-making about diagnostic testing and optimizing treatment plans. • Among the 29 lab-confirmed cases of influenza evaluated in RAFT, off-season transmission accounted for a quarter. Influenza circulates year-round in tropical regions and seasonally in temperate regions with peak transmission from October to March in the northern hemisphere and from April to October in the southern hemisphere<sup>4</sup>. Clinicians should have it on their differential diagnosis and perform nasopharyngeal swabs on returned travelers with influenza-like illness, regardless of month or season.
- Gastrointestinal, nonspecific viral, and respiratory syndromes were well represented clinical diagnoses, with travelers diarrhea and viral upper respiratory tract infections being the top causes of fever in our subset of travelers.
- Assessing the travelers disease risk by geographic region can guide pre-travel counseling and help clinicians recommend appropriate preventative measures and vaccines for at-risk destinations.

References

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