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INTERNATIONAL TRAVEL AND HEALTH: CONCERNS, SITUATION AND SOLUTIONS

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Abstract: *International travel is a growing industry and millions of international travellers arrive and depart all through-out the world in this jet age. International travellers are prone to have certain health risks. It includes physical problems, psychological problems, Infectious Diseases, Injuries etc. The health risk to the travellers also depend on the various factors like destination, duration of travel, season of travel, purpose of travel, standards of accommodation etc. Thus it is a big challenge to public health in that way. Travellers with pre-existing diseases pose additional threat to their health. There are certain infectious diseases for which mandatory vaccination is required (e.g. Yellow Fever). SARS, Ebola virus disease and Swine flu are the recent examples which greatly influenced the international travel. Visiting Friends and Relatives (VFR) and the Hajj Pilgrimage are the two important categories of international travellers worldwide. The International Health Regulations (IHR) aims to prevent, protect against, control and provide public responses to the international spread of diseases. International responses and collaborations are required to combat the public health issues emerging out with rapid international travel. The roles and responsibilities of the travel industry professionals as well as the travellers are also discussed.*

Keywords: *International travel, health, International Health Regulations, Vaccines for travellers.*

According to the WTO (World Tourism Organization), there were more than 800 million international travelers' arrivals during 2005. Majority among those (>50%) had the purpose of leisure, recreation or holidays; about 16% for business and about 26% for visiting friends and relatives. It can be assumed that the international travellers are prone to various kinds of physical, mental as well as social health problems; both during as well as after the travel. Long hours of journey as well as crossing of time zones have got significant impact on the biological processes of the human body. Thus the health risk related to travelers put global public health in problem, particularly the risk of infectious disease transmission.¹ Travelers are exposed to various health risks depending

upon destination, duration of travel, season of travel, purpose of travel, standards of accommodation, food hygiene, travelers' behavior and the underlying health of travelers.² The science of the health of travellers is known as Emporiatics.³ Travelers with special needs are considered more because of the need of special attention/medical supervision, for the comfort of other travelers and also for the prevention of provocation of illness during journey. They include infants, young children, aged, pregnant women and travelers with pre-existing medical illness, like cardiovascular diseases, Renal Diseases, Diabetes, Chronic Hepatitis and Mental Disorders. Travelers with pre-existing illnesses should always carry a labeled carry-on-luggage of their medicines

with prescription certificate with all details of the physician throughout travel. ⁴

Air Travel

The main health hazards¹ due air travel include changes in cabin air pressure, change in humidity (which can lead to dry skin, discomfort in eyes etc.) motion sickness, circulatory disturbances (rarely on prolonged immobility). "Jet lag" is a term when symptoms like indigestion, malaise, daytime sleepiness, disturbed bowel function etc. occurs due to disruption of body's internal clock after passing multiple time zones. It can be prevented by taking adequate rest, taking light meals and avoiding alcohol. Psychological problems like stress, flight phobia, air rage etc. can also occur.

Sea Travel

The cruise-ship travellers for long distances are particularly vulnerable to diseases like gastrointestinal infections (due to sea food) ⁵, respiratory infections like influenza (due to large crew) etc. They are also subjected to. (1) Variations in weather, (2) Changes in diet (3) Increased stress (4) Change in physical activities & (5) Risk of exaggeration of chronic illnesses like cardiovascular diseases. All the general measures can prevent much of such problems.

Environmental Health Risks

This mainly includes factors like altitude, heat, humidity, UV radiation, food-borne and water-borne diseases.⁶ "Travellers' Diarrhoea" is the most common health problem among those. It could spoil the purpose of the travel even with some brief episodes. Precautions include eating only cooked food which is still hot. The major infections travellers may suffer during traveling are diarrhoea, respiratory

infections and ear infections. Cold water, in particular, could also cause significant risk due to Hypothermia (leading to cardiac arrest); difficulty in swimming (chance of drowning); and concurrent use of alcohol (further reduction in body heat and confusion). Travellers are many times at risks to snake bite; for which they should avoid walking barefooted in forest areas, should take special care at outdoor stays at night and should avoid provocative behaviours.

Risk of injuries

Injuries kill the travellers more than the infectious diseases do¹. Traffic collisions are the most common cause of death among them. Other injuries include injuries in recreational waters, like drowning, impact injuries. Impact injuries mainly in shallow water or unclear water with obstructions inside.

Infectious Diseases and International Travel

The risk of acquiring a particular infectious disease will vary depending on the purpose of tour, standards of accommodation, hygiene and sanitation, behaviour of traveller. Special attention should be given to children. Travellers should avoid excessive alcohol usage and isolated places. Specific infectious diseases involving potential health risks for travellers depend on certain criteria.⁷

- Diseases that have a sufficiently high global or regional prevalence
- Diseases those are severe and life-threatening
- Diseases for which the perceived risk may be much greater which cause anxiety to travellers
- Diseases that involve a public health risk due to transmission of infection to others by the infected traveller.

Table 1:
Infectious Diseases of concern for International Travellers 8-14

Disease	Mode of transmission	Regions endemic/affected	Year of effect	Major at risk groups
Malaria	Mosquito borne- Anopheles	Africa, Latin America, South-East Asia	*	Children, Pregnant women
Japanese Encephalitis	Mosquito borne - Culex	Asia, Australia (Queensland only)	*	Rice field workers
HIV/AIDS	Blood borne	Africa (including South Africa), Russia, Indonesia, Thailand	*	Homosexuals, IDUs
Ebola virus disease	Air borne	West Africa, Vietnam, Mali, Guinea, Sierra Leone	2014	Non specific
SARS (Severe Acute Respiratory Syndrome)	Air borne	China, Hong Kong, Vietnam, Canada, Singapore	2003	Non specific
Cholera	Water borne	Asia, Africa ¹⁵	*	Pilgrimage , refugee camps
Yellow fever	Mosquito borne- Aedes	Africa, Latin America ¹⁶	*	Wood cutters, hunters
Avian influenza	Air-borne	Thailand, Egypt, Hong Kong, Indonesia	1999-2004 ¹⁷	Poultry workers, Slaughter houses
CCHF (Crimean Congo Haemorrhagic Fever)	Tick borne	Asia , Middle East	2012	Farmers

* Endemic nature

There are three categories of vaccines for travelers: routine, selective and mandatory. Selectively used vaccines include: Cholera, Hepatitis A, Japanese Encephalitis, Meningococcal, Rabies and Typhoid. There are some vaccines which are mandatory for travellers depending upon the country they are visiting. This includes Yellow Fever vaccine for selected countries and Meningococcal & Polio vaccines for the Hajj pilgrims of Saudi Arabia. Even with vaccination, travelers should not consider themselves completely protected and should seek protective measures for particular diseases. The aims of mandatory vaccination are to protect individuals in risk areas and to protect countries from importation of the virus.

Psychological Health Issues:

International travel is often creates psychological stress among the travellers as they face separation from family and familiar social support systems.¹⁸ They are expected to cope up well and quickly to the possible psychological stressors. The legal environment is also different from country to country. The clinician practises, laws

dealing with the use of illicit substances also tend to vary considerably. These issues are often overlooked by travellers coming for short stays and sometimes that leads them in trouble.

Travellers of Special Groups:

(1) Visiting Friends and Relatives (VFR) : Many countries in the world have now got about 20% immigrants in them, with a total of 190 million migrants in 2005.¹⁹ VFR usually refers to immigrants from a developing country to an industrialized country who subsequently come to their home country to visit friends and relatives. They all are at high risk of contracting common infectious diseases from the developing world and are responsible for importing more than half of total imported cases like malaria to developed world. They commonly put themselves on risk by not taking proper protection measures, not taking vaccines and being at a different level of awareness about risk. NRI (Non Resident Indian) population is growing in the world. It was estimated that in 2007 there were about 17 lac of those in the US, 15 lac in Saudi Arabia, 12 lac in the UK and 10 lac in South

Africa.⁸ This suggest that there could be huge numbers of travellers going to and fro from India every year. **(2) The Hajj Pilgrims:** The known data suggests that during hajj, more than 2 million visitors come together at one place. They are susceptible to disadvantages of overcrowding, heatstroke, traffic issues, dehydration, stampedes, fire clashes, air-borne infections and person to person infections. They had an epidemic of meningococcal type A in 1987 and type W 135 in 2001. The mandatory vaccines include Meningococcal (quadrivalent), Cholera, Hepatitis A, Diphtheria, Polio and Yellow Fever where applicable.

International Health Regulations (IHR):

IHRs adopted in 1969, amended in 1973 and 1981 and completely revised in 2005 are having purposes to prevent, protect against, control and provide public responses to the international spread of diseases .Main objectives⁴ are: applying routine preventive measures and use of internationally approved documents by all countries; the notification of any public health emergency to the WHO; the implementation of temporary recommendations in case of emergency. The revised version also focuses on the provision of support for affected states and avoiding unnecessary stigma to those states. The travelers would encounter most commonly to Yellow Fever vaccination requirements and the aircraft disinsection concerning to these regulations. Ultimate responsibility lies with the countries national disease and epidemiological surveillance.

Role of Travel Industry Professionals and Responsibilities of the Travellers:

These could be in the forms of tour operators, travel agents, airline and shipping companies etc. Their main responsibilities are: to advice about consulting a travel medical clinic/practitioner; To inform travelers about destinations having hazards

and suggest solutions; to encourage travelers to take travelers' health insurance; to provide information about mandatory vaccination, presence/absence of good quality care at destinations and procedures for seeking any assistance during travel. The responsibilities¹ of travellers also play role. It includes:

- The decision to travel
- Recognition and acceptance of any risk involved.
- Seeking health advice beforehand.
- Protected with vaccinations, medications & other prescribed health measures.
- Adequate insurance cover.
- Health precautions before, during and after journey
- Precaution to avoid infectious disease transmission to other travelers.
- Reporting of any event of ill-health.
- Respecting the host country and its people.

The growing speed and incidences of international travel have concluded that infectious disease of one country may be of potential threat to the entire world, particularly those having rapid spread and high case fatality. Efforts must be drawn from national levels from each country and then cumulatively to the international coordination. There have been some developments at international levels. The establishment of the International Society of Travel Medicine –ISTM in 1991 at the during the second Conference of International Travel Medicine in 1991 with over 900 delegates, ISTM has now grown to over 3,200 members in 90 countries and is the largest organization of professionals dedicated to the advancement of the specialty of travel medicine.²⁰ The precautions and awareness should be tied to all levels of international travel, starting from travellers, travel agencies, local/national governments, aircraft authorities as well as the international health agencies.

References:

1. World Health Organization -WHO, 2007, International travel & Health – Situation as on 1 January 2007. www.who.int/en/ith last accessed on 11/12/2007.
2. Park K., Park's Textbook of Preventive & Social Medicine, 2007, 19th edition, 107-114.
3. Editorial (1982), British Medical Journal, 285-582.
4. World Health Organization -WHO (1996), International Travel and Health, *Vaccination Requirements and Health Advice*.
5. World Health Organization -WHO (1983), WHO Chronicle, 37 (6) 210.
6. Center for Disease Control and Prevention (CDC), *Travelers*, www.cdc.gov/travel. Last accessed on 01/12/2014.
7. World Health Organization (WHO), 2014, International Travel and Health , *Infectious Diseases in International Travel*, Web link <http://who.int/ith/> last accessed on 20/11/2014
8. Beltrame A., Bisoffi Z. & Rorato G., *Imported Chikungunya Infection, Italy*, Emerging Infectious Diseases, 2007, Vol. 13, No. 8.
9. BBC World News, *British Broadcasting Corporation*, May 26, 2006, <http://news.bbc.co.uk/1/hi/health/>
10. Centre for Disease Control & Prevention, 2008, <http://www.cdc.gov/mmwr/index.html> accessed on 03/01/2008.
11. Malaria & Travelers, World Health Report, World Health Organization, 2006. <http://malaria.who.int/images/malariaandtravellers/malaria2006>
12. Morbidity and Mortality Weekly Report , *Chikungunya Diagnosed among International Travelers – United States*, 2006, March 2007, Vol. 56, No. 12, 276-282. <http://www.cdc.gov/mmwr/index.html>
13. WHO, Regional Office for the Western Pacific, 34th session, 2005. <http://www.wpro.who.int/rcm/en/> Last accessed on 10/10/2014
14. National Travel Health Network and Center, 2007, <http://www.nathnac.org/pro/factsheets/> accessed on 22/12/2007.
15. Map Library (2007) http://gamapserver.who.int/mapLibrary/Files/Maps/World_Cholera accessed on 24/12/2007.
16. World Health Organization - WHO (2007), *Imported Cases of Yellow Fever*, <http://www.who.int/csr/disease/yellowfev/impact1/en/index.html>, last accessed on 23/12/2007.
17. The European Union, Documented Avian Influenza Infections among Humans, 2006, Online: http://ec.europa.eu/health/ph_threats/com/Influenza/ accessed on 23/12/2007.
18. World Health Organization (WHO) ,2014, *Psychological Issues*, International Travel and Health, link http://who.int/ith/other_health_risks/psychological_health/en/ last accessed on 29/11/2014
19. Report of the Ministry of Overseas Indian Affairs, *Gujarat Samachar* (Daily newspaper) dated January 23, 2008.
20. International Society of Travel Medicine, Web link: <http://www.istm.org/content.asp?contentid=28> last accessed on 2/12/2014.