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# **Original Research Article**

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# Profile of Indians died abroad: analysis of secondary data of human remains arrived at point of entry in Mumbai

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#### **ABSTRACT**

**Background:** According to Ministry of External Affairs (MEA) – India, in 2015 a total of 8315 people of Indian origin died abroad and more than 65% were from United Arab Emirates (UAE) and Saudi Arabia. Present study was conducted to study the demographic profile and cause of death in case of persons died abroad.

**Methods:** Present descriptive study was conducted in APHO, Mumbai and it was a secondary data analysis. All records during 1<sup>st</sup> January 2016 to 31<sup>st</sup> December 2016, available in the office of APHO Mumbai related to clearance of dead body were reviewed. Data analysis was done in line with objectives by using Microsoft Excel. Qualitative data was presented by using number and percentages while quantitative data was presented by using mean and standard deviation.

**Results:** During the reporting period 534 dead bodies arrived at CSMI Airport. Average age of the person died abroad was 48.4 years and more than 85% were males. In more than 65% of cases the reported cause of death was heart related including cardiac arrest and road traffic accidents. More than 50% of dead bodies were from gulf countries.

**Conclusions:** Death was reported in a significant number of Indians travelling abroad and most of them were relatively young. Heart diseases including cardiac arrest and road traffic accidents were the commonest reported cause of death. A targeted health communication strategies for modification of life style and behavior change is recommended for persons travelling abroad.

Keywords: Point of entry, Indians died abroad, APHO Mumbai, Cause of death and public health clearance of dead bodies

# INTRODUCTION

Travelling abroad for business, employment, study or holidays is increasing globally, including among Indians. According to the Ministry of Tourism and World Bank, 18.33 million Indians travelled overseas in 2014 compared to around 16 million in 2013. More than half of the passenger traffic to and from India is accounted for by the countries in the Africa & Middle East. The international migration report-2017, estimated 258 million people living in a country other

than their country of birth - an increase of 40% since 2000. Around three quarters (74%) of all international migrants were of working age (between 20 and 64 years) and 48.4% were women. The number of Indian-born persons residing abroad numbered 17 million.<sup>4</sup>

According to one report from Ministry of External Affairs (MEA) – India, in 2015 a total of 8312 people of Indian origin died abroad while working there. Out of all people of Indian origin died abroad, more than 65% were from United Arab Emirates (UAE) and Saudi Arabia.<sup>5</sup> At

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present, there is no scheme of Government of India that provides compensation in respect of Indian nationals dying abroad.<sup>6</sup> According to estimates of MEA 31.2 million overseas Indians and there are 11.4 million Indian nationals abroad which include workers; businessmen and professionals.<sup>7,8</sup>

As per Indian Aircraft (Public Health) Rules 1954, four certificates (Death certificate, Embalming Certificate, NOC from Indian High Commission of the concerned country and Cancelled copy of the passport) are necessary for public health clearance of human remains which are to be provide 48 hours before the actual arrivals of the human remains.<sup>9,10</sup>

The fundamental principles of travel medicine have been defined as the "identification of disease and disorders of risk in various regions of the world, prevention of disease through education, behavior change, immunoprophylaxis & chemoprophylaxis and self- treatment of diseases. <sup>11,12</sup> The practice of travel medicine is a process of risk identification and risk reduction through appropriate intervention. <sup>12</sup>

Present study was conducted to understand the demographic profile and cause of death in case of persons died abroad and whose human remains arrived at Chhatrapati Shivaji Maharaj International (CSMI) Airport and cleared by Airport Health Organisation, Mumbai.

# **Objectives**

Present study was conducted with following objectives,

- To study the profile of persons whose remains arrived at CSMI Airport Mumbai.
- To study the cause of death of human remains arrived at CSMI Airport Mumbai.
- To study the country wise distribution of human remains arrived at CSMI Airport Mumbai.

# **METHODS**

Airport Health Organisation (APHO), Mumbai is a designated Point of Entry (PoE) under International Health Regulations (IHR) 2005. All human remains and dead bodies arrived at CSMI Airport, Mumbai need to be cleared by APHO Mumbai. APHO Mumbai ensures that the dead bodies arriving at CSMI Airport are free from any infection which has potential to cause public health emergency of international concern (PHEICs). As per IHR 2005 and Indian aircraft (Public Health) rules 1954 clearance to all human remains and dead bodies are issued if concern cargo produces death certificate of the deceased, Embalming certificate and certificate that the container is hermitically sealed, no objection certificate (NOC) from Indian consulate and cancelled passport.

Demographic details and information related to cause of death are recorded in dead body clearance register on daily basis. Also a copy of the records submitted by cargo is kept in the office of APHO Mumbai.

Present descriptive study was conducted in Airport Health Organisation, Mumbai. It was a secondary data analysis. All records available in the office of APHO Mumbai related to clearance of dead body were reviewed. Demographic details of the deceased and data related to cause of death was extracted from the passport and death certificate respectively.

Data was collected by using a standard questionnaire. All human remains and dead bodies arrived at C S I Airport during 1<sup>st</sup> January 2016 to 31<sup>st</sup> December 2016. Data was collected on age, sex, religion, occupation, place of residence in India, country in which the person died, cause of death and other related illness. Data was collected after taking necessary permissions from appropriate authorities. To preserve the confidentiality of the deceased person the data presented was anonymised.

Data analysis was done in line with objectives by using Microsoft excel. Qualitative data was presented by using number and percentages while quantitative data was presented by using mean and standard deviation.

#### **RESULTS**

Table 1: Month wise distribution of human remains arrived at CSMI Airport.

Month	Number	Percentage (%)
January	31	5.81
February	34	6.37
March	45	8.43
April	54	10.11
May	39	7.30
June	46	8.61
July	48	8.99
August	32	5.99
September	44	8.24
October	37	6.93
November	78	14.61
December	46	8.61
Total	534	100

During the year 2016, on an average every month 45 (range; 31–78) dead bodies arrive at CSMI Airport. Maximum dead bodies arrived in the months of March-April and November-December.

Out of total 534 dead bodies arrived at CSMI Airport; more than 85% were of males only 14.6% dead bodies were of females. Average age of persons died abroad was 48.4 years with minimum as 4 years and maximum as 86 years. Maximum dead bodies were of the persons in the

age group of 40–60 years followed by 20–40 years. Maximum (16.1%) dead bodies arrived were from UAE followed by Saudi Arabia (13.5%), Kuwait (10.9%), Oman, Bahrain and Dubai (6.7%). Around 52% of the dead bodies arrived were from other countries.

Out of total 534 dead bodies arrived at CSMI Airport, in more than 65% of the cases the cause of death was

reported as cardiac arrest & other heart related disorders and Road Traffic Accidents. Other reported causes of deaths were like fall from height, drowning, suicide, stroke and infectious diseases like Malaria, TB etc. In few cases the reported cause of death was natural, due to ageing.

Table 2: Demographic profile of human remains arrived at CSMI Airport (n=534).

Characteristics		Number	Percentage (%)
Age in completed years	<20	04	0.7
	20–40	170	31.8
	40–60	223	41.8
	>60	137	25.7
	Mean±SD= 48.4±15.3; Minimum= 04; Maximum= 86		
Sex	Male	456	85.4
	Female	78	14.6
Country from which human remains arrived	UAE	86	16.1
	Saudi Arabia	72	13.5
	Kuwait	58	10.9
	Oman, Bahrain & Dubai	36	06.7
	Others	282	52.8

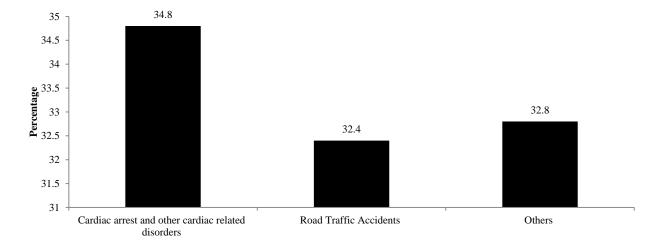


Figure 1: Cause of death of human remains arrive d at CSMI airport (n=534).

Table 3: Trend of human remains arrived at CSMI airport.

Year	Number of Indians died abroad	Dead bodies arrived at CSMI airport	Percentage (%)
2013	7433	441	5.9
2014	7691	482	6.3
2015	8315	594	7.1

According to reports of Ministry of External affairs, India during year 2013, 2014 and 2015 a total of 7433, 7691 and 8315 Indians died abroad respectively. During the same reporting period of year 2013, 2014 and 2015 total 441, 482 and 594 dead bodies arrived at CSMI Airport, Mumbai. Every year dead bodies of 5 to 7% of Indians died abroad are brought to India through CSMI Airport, Mumbai.

According to reports of Ministry of External affairs, India during year 2013, 2014 and 2015 a total of 7433, 7691 and 8315 Indians died abroad respectively. In year 2013, out of total Indians died abroad maximum were from UAE (32.71%) and Saudi Arabia (32.13%) followed by Oman (7.47%) and Kuwait (7.17%) and Qatar (3.2%). Similar trend was observed during year 2014 and 2015 also.

Table 4. Countr	v wise distribution	of Indians died	ahroad
Table 4: Countr	v wise distribution	or murans area	i aproau.

Country of origin of human remains	Year					
	2013		2014		2015	
	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
UAE	2431	32.71	2513	32.67	2741	32.98
Saudi Arabia	2388	32.13	2411	31.35	2674	32.17
Oman	555	7.47	519	7.47	520	6.26
Kuwait	533	7.17	559	7.17	611	7.35
Qatar	241	3.24	279	3.24	279	3.36
Other countries	1285	17.29	1410	18.33	1487	17.89
Total deaths	7433	100	7691	100	8315	100

#### **DISCUSSION**

CSMI Airport is one of the busiest airports of the country. Every year around 500 to 600 dead bodies arrives at CSMI Airport. Public Health Clearance to all these dead bodies is issued by APHO Mumbai. The reported average age of Indians dying abroad is around 48 years. In 2014 Survey conducted by NSSO on morbidity and health reports that in non-social group variables – categories unrelated to caste and religion – the average life of labourer was 45.2 years. 13 Maximum people who have died abroad were in the socioeconomically productive (20-60 years) age group and were male. This may be due to age specific and sex specific migration as reported in other surveys.<sup>14</sup> The month wise distribution of number of dead bodies arrived at CSMI Airport shows bimodal distribution. Maximum dead bodies arrived in the month of March-April and November-December. This coincides with the period of outmigration of Indians for the purpose of vacation and celebrations. Maximum dead bodies arrived were from gulf countries mainly UAE, Saudi Arabia, Kuwait, Oman, Bahrain and Dubai.

In respect of Indians died abroad the commonest cause of death was reported as cardiac arrest & other heart related disorders and road traffic accidents. Other reported causes of deaths were like fall from height, drowning, suicide, stroke and infectious diseases like Malaria, TB etc. In few cases the reported cause of death was natural, due to ageing. The institute for health metric and evaluation at the University of Washington uses Global disease burden (GDB) data 2016 to list heart disease as the top cause of deaths in India. <sup>15</sup> Palaniappan et al reported cardiovascular disease as the leading cause of death for both sexes of Indian Asians in California. <sup>16</sup>

# **CONCLUSION**

Death was reported in a significant number of Indians travelling abroad and most of them were relatively young. Heart related diseases including cardiac arrest and road traffic accidents were the commonest reported cause of death. A targeted health communication strategies for

modification of life style and behavior change is recommended for persons travelling abroad.

#### Limitations

The present study is based on analysis of secondary data so it carries all the limitations of secondary data analysis.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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