

The Role of Thermal Screening at Railway Station in Aurangabad: Early Detection of Suspected Cases of Covid-19

Dr Pallavi Jagan Tanpure¹, Dr Wahab Shaikh², Dr Dipak Burungale³, Dr Prashant P Raktade⁴

Date of Submission: 22-02-2021

Date of Acceptance: 07-03-2021

I. Introduction

The railway station is the important entry point where any passengers may enter legally from one city to another city in India. Aurangabad municipal cooperation health department units responsible for undertaking measures for surveillance and response health activities at Aurangabad Railway station Aurangabad is a designated point of entry for coordination of activities and containment of public health emergency of national concern.

Covid- 19 was first identified in wuhan city of china in December 2019 on January 30 2020 the world health organisation (WHO) declared the covid- 19 as pandemic ^{1,4} thermal screening which can identify fever 9 (high external body temperature) allows for passengers exhibiting symptoms of covid- 19 infection to be tested before they board a train similarly entry screening for train originating in the most affected regions may be under consideration railway stations in regions. While the number of covid- 19 cases increasing day by day so the government of India has started thermal screening of passengers arriving from various cities with local transmission at all point of entries present study was concluded to understand the screening in early detection of suspected cases of covid- 19

II. Objectives

Objectives of current study were to study the covid- 19 screening activity at Railway station Aurangabad to measure the fever detection rate in passengers screened at Railway station and to study the usefulness of thermal screening at railway station for early detection of suspected cases of covid- 19

III. Method

Descriptive study design was used and secondary analysis of the data of passengers arrived at Aurangabad Railway station was done. Data was collected from Aurangabad Railway station Superintendent who work in collaboration with Aurangabad municipal cooperation universal sample size and selection criteria to include data of all passengers arrived at selected Railway station

Aurangabad is a prime city in marathwada region in Maharashtra and Aurangabad Railway station is busiest Railway station in south central railway division by using purposive sampling technique all records, reports and office orders in reference to covid- 19 available at Aurangabad municipal cooperation were reviewed data from self reporting forms submitted by arriving passengers reports of screening activity daily reports submitted by municipal cooperation health officers to higher authorities and patient referred forms was collected data was collected for the period July 20- 2020 to February 20- 2021 from selected railway station.

The study was done after taking permission from appropriate authorities the information extracted from records of the passengers was kept confidential and not shared or used for any other purpose personal information of the study participant was not extracted confidentiality and anonymity of study participant was maintained by coding the self reporting forms we analyzed data using Microsoft excel 2007 the results were presented in the form of rates and ratios appropriately chi-square test was used to examine the usefulness of the screening activity and $P \leq 0.05$ was considered statistically significant.

IV. Result

During the period of July 20-2020 to February 20-2021, 150000 passengers were arrived a Aurangabad Railway station all passengers were screened by thermal scanning to detect the suspected cases of covid- 19 in the month of July August and January 2020-2021 i.e 5.49% , 19.57% and 79.54% of all arrived passengers were screened and fever detection rate was 95 per million passenger screened on 30 January 2020 WHO declared covid- 19 as public health emergency of international concern and guideline, SOP were issued

for surveillance and international travel. In India first case of covid- 19 was reported on 31 January 2020 in a student evacuated from Wuhan city of china

Thermal screening has been started all over the country at almost all entry points including Airports and Railway stations it was decided to categorize all screened passengers and asymptomatic passengers with Comorbidities were kept in institutional quarantine under observation for 14 days and the positive passengers were released only after treatment if they tested negative for covid- 19 tests (RTPCR).

V. Discussion

Government of India started screening of international and national passengers in response to the increasing number of cases of novel corona virus all over the world the decision was taken 2 weeks before novel corona virus was declared PEEIC by WHO as a precautionary method to prevent the further spread of infection into community and to treat the infected cases as early as possible. Entry screening done on arrival at the destined railway station can be a opportunity to gather contact information that is useful if it turns out an infection did spread during a travelling and to give travellers guidance on what to do if they become ill⁷ also it shows the posturing of the government to respond to the pandemic building confidence in the citizens and travellers during the period of 8 months screening so many patients has been evaluated out of which on 151 were detected with fever. The prevalence of fever was 95 per million passengers screened

Study concluded by William et al in 2010 during SARS pandemic reported the prevalence of fever as 600 per million passengers screened at international airport and concluded that public health surveillance of febrile passengers arriving at an international airport should not rely on voluntary participation for the detection of imported contagious diseases

In present study the prevalence of fever in arriving passengers was comparatively very low this could be because of the exit screening which was already done at the departing Railway station due to which only Afebrile passengers are allowed to travel. The reason could be that due to fear of getting quarantine at arriving destination passengers could have taken anti-pyretic tablets.⁸

There is a question mark regarding the accuracy of thermal scanner and hand held thermometer because they are not perfect shortcoming is that they measure skin temperature which can be higher or lower than core body temperature the key metric for fever . The devices produce false positive as well as false negative results according to the EU health programme (traveller flagged as feverish by scanners typically go through a secondary screening where oral ear, or armpit thermometer are used to confirm the person's temperature)⁷

Passengers can also take fever suppressing drugs or suppress information about their symptoms and where they have been .Most importantly infected people still in their incubation phase (anywhere between 2 and 14 days) are often missed for covid- 19⁷

Researchers at the European center for disease prevention and control concluded that approximately 75% of passengers infected with covid- 19 and travelling from affected Chinese cities would not be detected by entry screening⁵

A study by a group at the London school of hygiene and tropical medicine concluded that exit and entry screening is unlikely to prevent passage of infected travellers into new countries or regions where they may seed local transmission^{6,7}

VI. Conclusion:

Thermal screening of passengers at Railway station has limited role in early detection of suspected cases of infectious disease like covid-19 and has minimum impact on the course of pandemic. However entry screening coupled with data collection through self reporting forms gives opportunity to passengers to self report their symptoms and sensitizes the passengers and help the system for contact tracing and testing of the passengers as and when required.

Keywords

Covid-19, Thermal screening, early detection of covid-19, fever.

References:

- [1]. COVID-19 can be characterised as pandemic available at: <http://www.who.in/dg/speeches/details/who-director-general-s-opening-remark-atthe-media-briefing-on-covid-19-11-march-2020> .Accessed on 20 March 2020
- [2]. Effectiveness of travellers screening for emerging pathogens is shaped by epidemiology and natural history of infection. *elife*.2015;4e05564. Gostic KM, Kucharski AJ, LIoyd-smith JO.
- [3]. Introduction to international health regulations at point of entries India. Available at <http://www.ihrpoe.co.in/>Accessed on 13 october 2020.
- [4]. Responding to COVID-19 pandemic: why a strong health system is required. *Indian J Med Res.* 2020;151(2):140-5

- [5]. European centre for disease prevention and control. Considerations for travel-related measure to reduce spread of COVID-19 in the EU/EEA.ECDC:Stockholm:2020. Available at : [http://www.ecdc.europa.eu/sites/default/files/documents/considerations related to measures-for-traveller-reduce-spread-COVID-19-in-the EUEEA.pdf](http://www.ecdc.europa.eu/sites/default/files/documents/considerations%20related%20to%20measures%20for%20traveller%20reduce%20spread%20COVID-19%20in%20the%20EUEEA.pdf). Accessed on 13 october 2020.
- [6]. Department of health, coronavirus: latest information and advice. Available at <http://www.gov.uk/guidance/wuhan-novel-coronavirus-information-for-the-public#advice-for-travellers-from-wuhan>. Accessed on 13 october 2020.
- [7]. Why Airport screening won't stop the spread of corona virus. Available at [http://www.sciencemag.org/news/2020/03/ Why Airport screening won't stop the spread of corona virus](http://www.sciencemag.org/news/2020/03/Why-Airport-screening-won-t-stop-the-spread-of-corona-virus). Accessed on 1 October 2020
- [8]. Corona virus: many took pills to lower temperature before Hyderabad Airport check ; Available at :[http://timesofindia.intiatimes.com/city/Hyderabad/coronavirus-many took pills to lower temperature-before-city-airport-check/articleshow/74740666.cms](http://timesofindia.intiatimes.com/city/Hyderabad/coronavirus-many-took-pills-to-lower-temperature-before-city-airport-check/articleshow/74740666.cms). Accessed on 1 October 2020

Dr Pallavi Jagan Tanpure, et. al. "The Role of Thermal Screening at Railway Station in Aurangabad: Early Detection of Suspected Cases of Covid-19." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(03), 2021, pp. 34-36.