

# Syndromic surveillance in religious festival involving circumambulation in India

Vishal Diwan<sup>\*1,3</sup>, Ponnaiah Manickam<sup>2</sup>, Viduthalai virumbi Balagurusamy<sup>2</sup>, Priyank Soni<sup>1</sup>, Ashish Pathak<sup>1,3</sup>, Jeromie wesley Thangaraj<sup>2</sup>, Vivek Parashar<sup>1</sup>, P Ganeshkumar<sup>2</sup>, Chandrasekar Ravichandran<sup>2</sup>, Ankit Garg<sup>1</sup>, Madhusudhana Rao<sup>2</sup>, Sendhil Kumar<sup>2</sup>, V Vettrichelvan<sup>2</sup>, Manoj Murhekar<sup>2</sup> and Vijay K. Mahadik<sup>1</sup>

<sup>1</sup>Public Health and Environment, R.D. Gardi Medical College, Ujjain, India; <sup>2</sup>National Institute of Epidemiology, Chennai, India; <sup>3</sup>Karolinska Institutet, Stockholm, Sweden

## Objective

To study operation feasibility and preparedness of a tablet-based participatory syndromic surveillance among pilgrims during annual ritual circumambulation (Panchkroshi Yatra) covering 15 miles daily in Ujjain, Madhya Pradesh India

## Introduction

Panchkroshi yatra is an annual ritual of circumambulation (*yatra*) of temples (*Mahadevs*) and 100,000 devotees walk for around 15 miles per day for six days and cover a total of 73 miles to worship important *Mahadevs*. The festival is held every year at the city of Ujjain, Madhya Pradesh, Central India. The *yatra* attracts large number of pilgrims especially from rural areas and usually women outnumber men. During the *yatra*, the pilgrims halt at several places and prepare their food in outdoors. We described the public health preparedness, implemented a tablet-based participatory syndromic surveillance among pilgrims of the *yatra* and reviewed satisfaction of the pilgrims regarding implementation of public health measures, Ujjain during 21-26, April, 2017.

## Methods

We described preparedness and arrangements done for the *Yatra*. We designed tablet-based android to collect information from pilgrims on socio-demographic-economic details, location and self-reported health problems (syndromes). Trained investigators collected data from consenting pilgrims at strategically located halting places. We interviewed a convenient sample of consenting participants to assess satisfaction regarding the public health measures such as sanitation, water, safety, food and cleanliness.

## Results

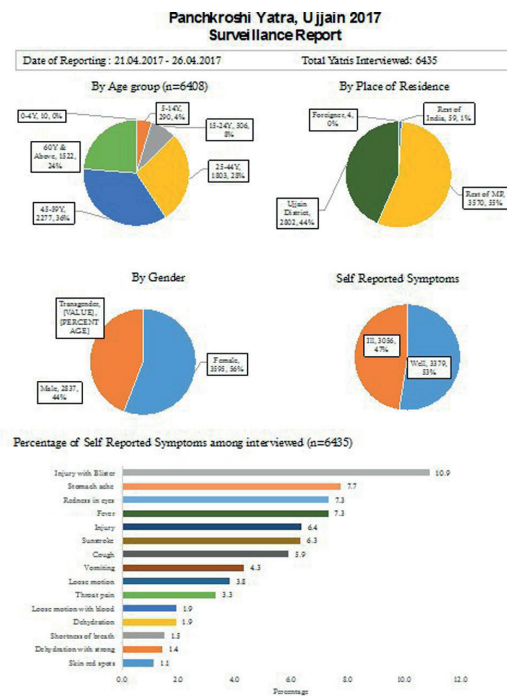
The district team organized round-the-clock medical camps in strategic locations (mainly at temple or halting place) of the route of the *Yatra* with few camps having admission facility for emergency conditions. There were no mobile medical units. Ambulance services were on standby at all medical camps. Our satisfactory survey of 360 participants indicated that 79% were satisfied with these medical facilities (79%). District administration alongwith local village administration (*panchayat*) had set up outlets selling provisions necessary meeting cooking needs. Eighty percent pilgrims were satisfied with food and refreshment arrangements. Permanent and temporary toilets were set-up at the halt-locations but not on the route. Sanitation measures such as chlorination and solid waste management were in place. Pilgrims' satisfaction for urinals (53%) and toilets (60%) was less as compared to cleanliness (74%). Electrical supply and lighting were arranged properly. Volunteers were available to provide assistance to pilgrims. Provision of safe drinking water and potable water were arranged by the authorities and the village-residents made water available through well, pots etc. The survey suggested that only 5% of them were not satisfied with water related arrangements. Security arrangements such as deployment of police,

crowd management, and traffic control and fire safety were well-arranged by the authorities and majority of the respondents expressed satisfaction on these arrangements (79-84%).

We interviewed 6435 pilgrims for any self-reported symptoms. More than half (56%) of the responders were female and majority (64%) aged 15- 59 years. Around 44% were from Ujjain district. Every second person (around 47%) reported illness with one or other symptoms. Most of them complained of injury with blister (11%). Other common complaints include stomach ache (8%), redness in eyes (7%), fever (7%), cough (6%), vomiting (4%), diarrhea (4%) and throat pain (3%) (Figure)

## Conclusions

The participants' response indicates that all the public health and safety measures were satisfactory except the need for setting up urinals along the fixed route of circumambulation. Tablet-based surveillance during the *yatra* indicated that injury was the most commonly self-reported health problem. Implementation of such surveillance helps in tracking health events and therefore, may facilitate preparedness and response. We recommend implementation of such tablet-based surveillance during such mass gathering events.



## Keywords

Participatory; Mass gathering; syndromic surveillance; India



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**\*Vishal Diwan**

E-mail: vishaldiwan@hotmail.com

