

Usefulness of Syndromic Surveillance during Ultra-endurance Running Races: Example with the “Grand Raid de La Réunion” Ultra Trail

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Objective

To estimate the health impact of the “Grand Raid de la Réunion” (GRR) ultra trail in 2012 on the emergency departments (ED) of Reunion Island.

Introduction

The “Grand Raid de la Réunion” is one of the hardest ultra trails in the world (5,350 competitors in 2012). This one stage race takes place in Reunion Island, a French overseas department in the Indian Ocean. Ultra trails and ultra marathons are intense long-distance running races pushing back human physical abilities’ limits. In general terms, studies about these races highlight different severity levels’ injuries, from asymptomatic to critical condition [1-4]. No study has yet used syndromic surveillance to study the impact of such sporting events on ED visits. Using a syndromic surveillance approach to monitor sport-related visits could allow an early public health response.

Methods

The OSCOUR® network (Organisation de la surveillance coordonnée des urgences) daily monitors ED visits of the four hospitals. A literature review allowed to identify syndromes based on the ICD-10 codes for sports-related injuries. The GRR’s period, called P0 in this study, concerned the period from Friday October 19th 2012 to Tuesday October 23rd 2012. Each syndrome was compared to the same days (Friday to Tuesday) during the seven weeks before (P-1 to P-7) and the seven weeks after the event (P+1 to P+7).

Results

During the P0 period, a global increase of the ED visits all causes was observed. The syndromic surveillance system detected a significant ED visits’ increase for hydro-electrolytic disorders (Figure 1, $p < 0.05$). Furthermore, an increase of ED visits for orthopedic musculoskeletal traumatic injuries, painful symptoms and gastrointestinal disorders had been notified although it was not significant.

Conclusions

These results highlight the usefulness of syndromic surveillance to estimate the impact on health of a mass gathering on a sporting event of great magnitude. The health impact is globally moderate although ED visits are “a submerged part of the iceberg”. It would be useful to extend this syndromic surveillance to other data sources such as general practitioners or medical teams on site.

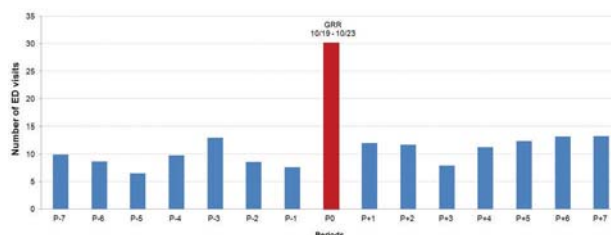


Figure 1. Number of ED visits for hydro-electrolytic disorders, P-7 to P+7, Reunion Island, France, 2012 (n=176)

Keywords

ultra trail; syndromic surveillance; Reunion Island

Acknowledgments

The authors wish to thank the contributions of all the physicians being part of the syndromic surveillance system in Reunion Island.

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