Impact of the New Zealand 2011 Rugby World Cup on an Urban Emergency Department
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ABSTRACT
AIMS: The next Rugby World Cup will take place in England commencing August 2015. This paper describes the preparation and workload relating to the previous Rugby World Cup, held in New Zealand 2011, as it affected the primary receiving hospital for the main venue. This paper describes preparation arrangements and actual workload patterns to assist planners with future similar events.

METHODS: Preparations for the tournament were summarised, and data gathered from the Auckland City Hospital database were analysed for total and hourly presentation rates, short-stay observation workload, admission rate, 6-hour target compliance and type of presentation.

RESULTS: Overall workload during the tournament increased by 8%, but much larger spikes in attendances per hour and short-stay workload related to the major events were experienced. Alcohol-related presentations were very much more prominent than usual. Pre-arranged additional staffing and flow arrangements allowed the department to maintain 6-hour target compliance.

CONCLUSION: Major sporting events, such as the Rugby World Cup, require special arrangements to be put in place for the main local receiving Emergency Department, especially around the major events of a tournament.

The Rugby World Cup (RWC) is the 3rd largest sporting event in the world. It is next due to be held in England, commencing August 2015. The tournament was last contested in New Zealand from 9 September to 23 October 2011, and consisted of 48 matches across the country. The opening game and ceremony, both semi-finals and the final were played in Eden Park Stadium, Auckland. The Emergency Department serving both this stadium and the city centre ‘Fan Zone’ was Auckland City Hospital (ACH), a tertiary urban trauma centre. This paper describes some of the preparations made by the Adult Emergency Department (AED) and reports on the workload experienced during the tournament.

Preparation
A higher than usual workload was anticipated for the duration of the tournament and a number of strategies were employed to mitigate the effect of this. Previously published papers on major sporting events were reviewed. Local workload data from the hospital database were also extracted for periods around previous mass gathering events in the city.

There were essentially three strands to planning the medical cover for the event:
1. Central DHB-level emergency planning covering the possibility of mass casualty incident
2. St John Ambulance planning covering the positioning of ambulance and first aid assets for events and general cover
3. Specific AED plans for increased general workload and identification of likely peaks of activity.

Although planning began over one year before the event, plans required significant alteration in the build-up to the tournament due to the 2011 Christchurch Earthquake, which resulted in additional matches being played in Auckland and elsewhere.
With regard to the AED preparations, the following strategies were employed:

1. AED staffing: Medical staffing was supplemented by an additional senior doctor on standby throughout the tournament during weekdays and by an additional duty senior doctor on all weekend shifts (whether or not a match was being played in the city due to anticipated workload from the ‘Fan Zone’). The approximate cost of this staffing was estimated at $50,000.

2. Short stay unit: It was anticipated that there would be a larger number of intoxicated patients requiring a period of observation. The short-stay capacity of the department was doubled to eight beds and plans made to expand into the next door Admission Unit as required. Standard operating procedures regarding the triage and management of severely intoxicated patients were jointly drawn up with ambulance service and AED medical and nursing team.

3. Publicity campaign: A publicity campaign was mounted within the hospital through meetings, posters, events and email staff alerts to expedite and streamline flow out of AED for patients requiring the interaction of in-patient specialist services and radiology. An example of one of the posters is given in Figure 1.

4. Inter-departmental co-operation: Discussions took place with the other three emergency departments in the city to manage workload in the event of ACH becoming overloaded, with an understanding that ambulance diversion may be employed.

Results

Over the course of the tournament the department saw 7,419 new patients against a seasonal comparator of 6,854, representing an 8% increase in overall AED activity.

There were, however, several dramatic spikes in presentations, which presented challenges in spite of the preparations. The first occurred during the Opening Ceremony on 9 September, when larger than anticipated crowds turned out in the city centre ‘Fan Zone’ and difficulties...
occurred with transport infrastructure due to a railway incident and a significant road traffic accident. During this period, the department experienced a surge of Australasian Triage Category 2 and 3 presentations. Total presentations peaked at 25 per hour (Figure 2), which resulted in a large number of ambulances queuing to offload. A temporary diversion was put into effect for two hours to the two neighbouring emergency departments to redistribute ambulance resources and allow the AED to move some patients through to the adjacent admitting unit.

The second significant spike unsurprisingly occurred around the RWC Final between the home nation and France on Sunday 23 October. This produced a sustained late spike in activity that lasted several hours, and there were small numbers of patients diverted to other neighbouring departments.

These spikes in activity were matched by spikes in short-stay observation activity, with a peak during the evening of the opening ceremony of 44 patients, representing nearly a threefold increase on the departmental average of 15 per 24 hours.

During the tournament, no increase in the referral for admission rate was seen and the national ED target of 95% patients admitted or discharged within 6 hours was met (Figure 4). The department saw its highest ever 24hr daily attendances around those two peaks.

There was also a change in the case mix of the presenting problems, with alcohol-related presentations becoming much more prominent. For patients who were coded (ie, those with a stay greater than 3 hours),
alcohol intoxication moved from the 10th most common diagnosis (1% cases) to the 2nd most common diagnosis (4% cases). Problems relating to alcohol excess were particularly prominent at weekends (15% cases), increasing to 50% of all attendances being related to alcohol in the 4 hours following the conclusion of the final.

Discussion

Activity at ACH AED increased during the RWC in a reasonably predictable manner, with an overall increase of 8%, but with disruptive peaks in presentations and short stay workload around the times of the major events. The investment of time in planning for the event, particularly targeted additional medical resources at weekends, proved essential in managing this work, along with additional AED short-stay capacity and the hospital campaign to minimise delays to admission to in-patient beds.

Much of the additional workload appears to have been caused by alcohol consumption. Strategies to mitigate against alcohol-related harm would therefore seem to be an important part of planning for such events. Wellington Hospital has previously reported the use of a pre-hospital intoxication protocol for both their RWC matches and the Wellington Sevens tournament. Indeed, a similar system was implemented by St John Ambulance in Auckland during the tournament and is likely to have significantly buffered attendances at the AED. Large-scale public health measures to reduce alcohol harm were put in place during the London Olympics and they appear to have been highly successful in minimising impact on local health facilities.

We hope this report of our experiences may prove useful in planning future events including the upcoming RWC in England.

Conclusions

Major sporting tournaments require special planning arrangements to the receiving Emergency Departments, especially around likely spikes of activity consequent on mass crowd events. A comprehensive alcohol harm reduction strategy should be considered including public health measures and pre-hospital care.
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