

Omicron Bubble Infiltration in Cricket

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ABSTRACT

Aim: This paper reviews breaches in managed biosecure environments (BSEs) in cricket since the onset of the Omicron variant.

Background: Managed BSEs have allowed return to international cricket since the onset of the COVID-19 pandemic. The Omicron variant however disrupted three tours since its onset, with rapid spread through teams. The West Indies (WI) tour of Pakistan and Ireland tour of USA in December 2021, and Ireland tour of WI in January 2022 were all affected by an Omicron outbreak. The design of the BSE was examined. The mean time from symptoms to positive test, and the number of negative tests prior to becoming positive were calculated. The symptoms were recorded.

Case series: Twenty-four of 28 members of the WI squad ultimately tested positive; nine while in Pakistan and 13 on returning early to the Caribbean. The mean time between having symptoms and returning a positive polymerase chain reaction (PCR) test was 2.71 days (range 1–9 days). Each player had 0–4 negative PCR tests (mean 2.34) prior to returning a positive test. Nine of the positive persons were asymptomatic while those with symptoms resolved within 48 hours. Eleven of 38 Irish squad members tested positive, but positive family members forced others into isolation. Symptoms were all mild and mostly sore throats. Whereas the disease was mild, its virulent nature infected enough of the squads to affect fixtures. On-field exposure did not cause cross-team infection.

Conclusion: The Omicron variant is virulent though mild. However, once it enters a squad it spreads quickly but may take time to show positive on PCR or rapid antigen test (RAT). Whereas BSE protocols during this outbreak may need to be tightened as once contracted it leads to disruption of series, an alternative approach may be to treat symptomatic individuals as one does the common flu and isolate them alone.

Clinical significance: With increased vaccination rates among cricketers and decreased symptoms with newer COVID-19 variants, and little spread across teams in open spaces, the approach of BSE may need to be changed to treat outbreaks symptomatically.

Keywords: Biosecure environment, COVID-19, Cricket and medical, Omicron.

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BACKGROUND

“Rain no play” were dreaded words that could interrupt a cricket match for a prolonged period in the pre-COVID era. After COVID-19 pandemic brought all international sports to a halt in April 2020, cricket was the first international sport to resume in July 2020, when the WI toured England. This was done in a strict “contained bubble” (BSE)¹ which involved isolating and testing players at home, transporting them from the Caribbean to England in chartered planes, and keeping them within the facilities where the grounds had hotels on the premises to ensure that there is no interaction with the outdoor public. Players were quarantined in their rooms for 2 weeks with multiple PCR tests before being allowed to play.

The Caribbean Premier League (CPL) was the first international cricket league to resume in August 2020 in Trinidad and Tobago. This was conducted in a “water and glove bubble” (BSE) whereby players were housed in a dedicated hotel but transported to practice and match facilities in sterilized dedicated buses.¹

People were resigned to the fact that this is how cricket would continue over the next few years. With players isolating prior to touring, and then maintaining their strict protocols in the BSE, emphasis was on the mental stress being placed on all those within the bubble. Initially, spectators were not allowed in most facilities, but with the advent of vaccination of both players and spectators, this too was being relaxed.

In November 2020, the new Omicron variant of COVID-19 was discovered and was suspected to be more contagious than the predominant delta variant.

The WI tour of Pakistan in December 2021 was to have followed established protocols. Ireland toured the USA in December

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2021 and went on to Jamaica in January 2021, following slightly different protocols.

This paper describes Omicron infiltration into teams within the BSEs with no spread to the other team (who only had contact on the field of play). The Pakistan tour had to be aborted due to the outbreak, and the Ireland tours had matches canceled.

CASE SERIES DESCRIPTION

This case series looked at the teams and match officials that were involved in three series: WI tour of Pakistan 2021, held in Karachi, Pakistan, and Ireland tour of USA 2021 and WI 2022 held in Broward, Florida and Kingston, Jamaica, respectively. Protocols guiding the BSE were analyzed and the onset of COVID-19 cases was recorded from the results database of tests done. Players were followed for a week beyond the tour to ascertain their PCR status.

West Indies Tour of Pakistan

The WI tour of Pakistan saw both teams being tested prior to arrival. They entered a hotel where the BSE consisted of players from each team entering from a common entrance (secluded from other hotel guests). They were housed on separate dedicated floors at the hotel and used separate dedicated lifts. Match officials were on their own dedicated floor but used the Pakistan team lift.

A PCR test was done on arrival prior to members going into 3 days of in-room isolation. After a repeat PCR test on day 3 was negative, they were allowed to have breakfast in separated dedicated restaurants. At this time groups of four persons could walk with masks on the tennis courts and attend the gym in a regulated fashion. Teams were transported to the stadium in two buses per team and a separate bus for the match officials.³

Polymerase chain reaction tests were then scheduled for day 6 after which persons could mingle within their floor. Persons that would test positive would undergo 10 days of in-room isolation. Each room had separate air conditioning units with one-way exhausts, so there was no need for isolation rooms in a separate section of the hotel. To leave Pakistan, all persons needed to return a negative PCR test.

Ireland in USA and WI

The BSE in the USA was much more relaxed both in terms of testing and movement out of the hotel. Players were educated about the BSE and had a PCR test prior to arrival in USA. Most USA players and two Irish players were involved in a private T20 league in the USA where many positive tests were reported. Rapid antigen tests were to be done every 3–4 days following protocols in USA. Players who tested positive were sent for 10-day in-room isolation.

Players could travel with their partners and children if they wished. Squad rooms were not housed on dedicated floors and though a separate dining area was provided away from other hotel guests, it was shared between the Irish and USA squads as well as the match officials. Lifts and lobby were not restricted to persons in the BSE. Additionally, persons could leave the hotel to go to restaurants (outdoor dining only) and malls (for periods of no more than 15 minutes at a time).

They had to do a PCR prior to departure to Jamaica and undergo 3 days of in-room isolation as per the regulations of the Jamaican Ministry of Health. Following a negative test on arrival and on day 3, they could move within the dedicated hotel of the BSE. Positive tests required 10 days of in-room isolation.

RESULTS

West Indies in Pakistan

There were three sets of persons in the BSE in Pakistan: WI squad (28; 21 players and seven officials), Pakistan squad (20; 15 players and five officials), and match officials (six). None of the Pakistani squad or match officials had a positive case. In the WI squad, 24 persons were ultimately positive: four in the initial 3-day isolation period, and five on day 6 testing. The tour was aborted on day 8 and players returned home. Further, 15 tested positive on returning home.

Those that tested positive in Pakistan had 10 days of in-room isolation prior to being tested with a PCR test. They could leave only after receiving a negative test result. Those that tested positive on return to the Caribbean would have had a minimum of five negative PCR and one lateral flow test.

The sequence of events from arrival of the WI team to Pakistan is described. The West Indian squad congregated in Dubai coming

from either the Caribbean, within the United Arab Emirates (playing in the Abu Dhabi T10 league) or from the WI tour of Sri Lanka which ended 5 days prior. The last set of players and officials were in their third consecutive bubble over 4 months, and were advised to maintain low exposure to persons apart from their teammates.

Prior to departure in business class on a commercial flight to Karachi, all tested negative with a PCR test. On arrival, they were transported to the hotel in two sealed buses while keeping on their masks. At the hotel, they were placed in a large open hall and had PCR tests (day 0) done prior to being sent to their rooms for confinement until the results were received.

During this testing, two players complained of having a sore throat and headaches. Like all others, they were isolated in their rooms. They returned positive PCR results and remained isolated in their rooms for the next 10 days. Four immediate close contacts were retested 24 hours after the initial test. One of the contacts developed the same symptoms and returned a positive PCR test (on day 1). Another player who was not a close contact, but was engaged in the Abu Dhabi T10 competition, complained of vague abdominal symptoms which resolved within 24 hours. He was also tested and had a positive test on day 1.

Having isolated all the positive players, another round of routine PCR testing was done on day 3. All remaining 24 persons were negative. With the first T20 international match in 2 days, training commenced. The players were advised to keep their masks on during transport on sealed buses and congregate in small groups of three or four on the field and in the dressing room so that there would not be widespread exposure if the team were someone to have a lurking infection.

Over the next 3 days, five persons had symptoms of a scratchy throat, headaches, body aches, or just feeling weak. All but one resolved with medication within a day. One player continued to have tonsillitis which was instigated by carpeting in his room, a problem he had whenever he stayed in a carpeted room. No player had debilitation in function.

A routine PCR test was done on day 6 for both teams which revealed that five additional persons were positive in the WI squad. One was a close contact of the initial set, who had three negative PCR tests in the previous 6 days. The other was the one with tonsillitis. The remaining were a coach, a player who developed symptoms that morning, and the team physician. All of these persons' symptoms had resolved within a day but for a scratchy throat.

At this stage, with nine persons down, a decision was made to curtail the upcoming 1-day international series which was to start in 3 days. The last T20 match the next evening was also in doubt.⁵

The next morning (day 7) a RAT and PCR were done to facilitate travel out of Karachi that night. With the RAT returning negative and flights secured beyond match time, a collective decision was made to allow the players, all of whom remained asymptomatic, to complete the final fixture. A third team bus was acquired to further distance the players during transport to the ground. The match was completed, and players went departed shortly after. The PCR tests done in the morning were all negative, meaning that over 24-hour period, all of those traveling had two negative PCR tests and a negative RAT.

During that match, one player complained of chest tightness and slight chest pain. He was removed from play and had electrocardiography done which was normal. He was treated for the pain and resolved. He was monitored on return to his home, where he was asked to go into voluntary isolation. His PCR test on arrival (day 9) was negative, but 3 days later was positive.

Other persons started having symptoms on leaving. One complained of weakness, diarrhea, fatigue, and body pain for which he required medical assistance on the flight. His symptoms persisted while transiting in London and he was seen by a doctor and given symptomatic treatment. He had two negative RATs and therefore proceeded with his flight to the Caribbean. On arrival, he tested positive and had persistence of his symptoms.

Another player complained of symptoms while transiting and by the time he got to his destination, he was positive on PCR testing and put in isolation. Five additional players and a coach were asymptomatic but on testing noted to be positive on arrival in the Caribbean and were in isolation as well. A member of the management team who was also initially asymptomatic tested positive and subsequently developed mild diarrhea.

In the end, a total of 24 persons tested positive. Table 1 shows the time between having symptoms and testing positive. Of note, many had multiple negative tests prior to becoming positive. The mean time from onset of symptoms to testing positive was 2.71 days. Nine persons were asymptomatic throughout. Persons testing positive had a mean of 2.34 negative tests previously.

Genetic sequencing of the initial cases showed infection with the Omicron variant. Even though strict protocols were adhered to according to the medical plan it is clear that this virus was picked up before the players got to Pakistan and spread very quickly among the squad even though most persons wore masks and maintained social distancing.

Ireland Tour of USA and WI

When Ireland arrived in Broward the daily case numbers were 207 cases.² All players had negative PCRs on departure from Ireland, but two involved in the local T20 league tested positive on the day that the rest of the squad was traveling. They had been identified as close contacts of a positive person in the local competition and tested positive on both RAT and PCR done on the same day. They went into immediate isolation.

Following playing of the first two T20 matches, there was an outbreak in the USA and match official cohorts leading to postponement and ultimate cancellation of the ODI series. The Irish team decided to have practice on the day scheduled to have the first ODI (day 11) which happened without incident or any reporting of symptoms on daily health check. The next day the Ireland team was scheduled to train again. A member of staff reported having a headache and nasal congestion. He returned a positive RAT and was isolated. His result was confirmed by PCR and that led to the entire squad and partners being PCR tested. Those tests showed a member of the support staff and four family members also had positive PCR tests (in spite of having negative RAT the day before). They too were isolated as well as the players whose partners had tested positive. As per USA, those players had PCR tests on day 5 after their partner's positive PCR tests and since they were negative, they were cleared for travel to Jamaica. In doing PCR tests for this travel 2 days later (day 13) after the previous positives,

Table 1: Mean days to positive tests and negative tests prior to becoming positive

Team	Mean days to positive tests	Mean days to negative tests
WI	2.71 (1–9)	2.34 (0–4)
Ireland	10 (8–19)	1

two more players who, at the time, were not identified as close contacts of the previous group tested positive as well and were similarly isolated. The rest of the team departed for Jamaica on 31st December 2021. By that time the daily case numbers in Broward mushroomed to 6,962.²

On the Jamaica leg of the tour, subsequent positives began to show on antigen tests on days 7 (two cases), 9 (two cases), and 10 (one case). Like the WI cases, these too were identified as the Omicron variant.

Symptoms reported by all in the USA and Jamaica were mild and consistent within the whole group of positive cases. These included initial shivers and unexplained sweating followed by mild throat soreness, low levels of fatigue, headache, and nasal congestion. They lasted no longer than 48 hours. A small number of positives reported some pulsating low back pain around 2 days after the initial symptoms.

In Jamaica, once symptoms were reported, RATs were conducted each morning and evening. All were negative but returned positive PCR within 24 hours. Till then they were permitted to train with the entire squad.

All 11 positive Irish members had an initial negative test. They were retested because of symptoms. These took a mean of 10 days to manifest from the initial test (Table 1).

The outbreak led to postponement of the second and third ODI by 3 days and cancellation of the sole T20.

DISCUSSION

Since the resumption of cricket in BSE in July 2020 there have been postponement or cancellation of four International Cricket Council (ICC) events, 30 series between full ICC members, 13 series among associate members, and 10 international leagues.

After the initial contained BSE in England, and water in glove bubble in the Caribbean¹ most BSE have followed the latter format due to the situation in the host country. The CPL had players from 18 countries without any positive cases. Since then, dozens of bilateral international tours, international cricket leagues, and even a World Cup have been held in varying forms of BSE. These have ranged from complete freedom after a hard quarantine period in New Zealand and Australia, to confinement within luxury resorts adjacent to beaches and open spaces in the Caribbean. The harshest BSE involved total confinement within a floor of a hotel (as the hotel had other guests) and transport to the cricket facilities in dedicated sterilized buses.

Extensive resources were spent on PCR testing, travel, and quarantine. As players became vaccinated, the quarantine times have been shortened from 14 to 3 days. Many countries allowed limited spectators as well. When balls were handled by persons outside the BSE, and process of sterilization of the ball is conducted by the umpires though this has been shown to be unnecessary as the virus does not remain on the ball.³

Though there was infiltration in many other series, these seemed to occur after some time and were related to multiple travels through public airports and on commercial flights, and loose arrangements of intermingling between those in BSE and outside.

The WI tour of Pakistan in December 2021 was to have followed a water-in-glove protocol. With all players vaccinated, the in-room isolation periods had been shortened to 3 days. However, with the highly transmissible Omicron variant, this proved to be the undoing and this was the first series to be called off due to this variant. Though all persons followed protocols of mask-wearing

and sanitizing, the variant was brought into the squad by those who exhibited symptoms on arrival. Their contact with other members would have been at the Dubai airport, on the plane, and in the sealed buses to the hotel. Normally transport is done in buses with windows open and air-conditioning off to facilitate free flow of fresh air, but for security reasons buses were sealed in this instance.

Though the initial players immediately isolated in rooms transmission must have taken place to other players who then incubated and spread the virus over the next few days. Interestingly no member of the Pakistani cricket squad or any match official contracted the disease. Contact with these persons was only on the field of play though they did have handshake sessions at the end of each match. They were housed on different floors of the hotel, had separate dining areas, and transported in separate buses.

This is in keeping with findings in rugby⁴ and soccer⁵ where no transmission was shown among players on the field of play, in spite of there being persons playing that were later found to be positive.

To offset costs and to get results quickly, there was increased dependency on RAT. However, with this variant it has been shown that many false negatives have been seen in the Irish players both in USA and Jamaica where different test kits were used.

With return to cricket having almost being standardized in terms of medical protocols, the Omicron variant makes us rethink some aspects. The shortening of isolation periods on arrival coupled with use of commercial flights and passage through increasingly crowded airports has allowed Omicron to spread more extensively than previous variants.

Though the symptoms are not severe, much money has been lost by cancellation of series. That it does not seem to transmit in open spaces like in matches suggests that focus should be on preventing it entering the BSE at the onset. The WI cohort developed symptoms within a few days though outliers went on to test positive up to 9 days after their last negative test. However most presented within 2–3 days. If this could be curtailed at the onset, further spread may have been curtailed. This may require increasing the initial quarantine period to 5 days.

The Irish team which had little restrictions in the USA tested positive much later. This is likely due to prolonged exposure to positive persons while sharing dining areas when cases were increasing exponentially in the USA. There were also low levels of biosecurity measures at the hotel and while they dined and shopped. The effects persisted deep into the more controlled Jamaican leg.

It seems that the easing of restrictions does not apply to the Omicron variant, and while this remains dominant, more stringent BSE and increased quarantine times seem to be in order. We recognize the effects the BSE and quarantine are having on the

well-being of players and staff, but the rapidity of spread and cancellation of series is having a greater effect.

Whereas the Omicron variant has much milder symptoms, more frequent testing may need to be done to allay anxiety within the BSE. However, the RAT seems to be less reliable than PCR, and even then many negative PCR are seen prior to getting a positive result. Frequent PCR tests may need to be resorted to nonetheless, at least for the first week of the BSE.

Biosecure environments in sports have been progressively relaxed with better vaccination and understanding of the virus. This may have to be readjusted to more stringent measures for now as Omicron remains dominant. That it does not seem to spread across teams in open spaces shows that ensuring that it does not enter any of the squads will ensure that series can be played uninterrupted.

A complete change in thinking may also be contemplated in which infected individuals may be isolated and teams continue with the roster available. However, the virulence of the current variants would still require some form of a BSE as its rapid spread can infect large numbers of a squad very quickly rendering teams unable to field enough players.

CONCLUSIONS

As sports open to vaccinated athletes and spectators, newer variants will require agility in monitoring and isolation. The Omicron variant is very contagious but also not as easily detectable with RAT or single PCR tests. High clinical suspicion and early isolation may prevent widespread infection of teams and cancellation of events. The use of BSE should still be advocated though it may be reviewed with less virulent strains in the future.

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