Measles – A SAEFVIC Case Study

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The shopping centre: In early July 2014, a seven-year-old boy unwell with measles saw a movie at Highpoint shopping centre. He had recently returned from Taiwan. That same day, five-year-old twin girls, also visited Highpoint. Somewhere at the centre the children crossed paths and transmission occurred, simply by breathing, coughing or sneezing in close proximity. The twins contracted measles two weeks apart. The seven-year-old boy also infected his nine-year-old sister, who flew to Tasmania while infectious. None of the children had received measles vaccination.

The medical centres: The first twin visited two GPs and was seen by four physicians at a large metropolitan hospital presenting with the classic symptoms of measles including the febrile rash but she was not tested for measles. One GP suspected measles but did not notify the department of their suspicion.

The primary school: Both girls attended primary school while infectious with measles. They also attended a school photo session, after school care, and various public spaces including playgrounds. The primary school was asked to review the school enrolment immunisation status certificates to identify unvaccinated children. The certificates showed that six students were unvaccinated including the twins. Seven children were excluded from attending the school until the risk of infection had passed, including a student who was immunocompromised. A total of five out of six unvaccinated children at the school contracted measles. These children attended extra community activities (sporting and music events) and multiple GP waiting rooms while infectious.

The sports field: One student attended his football grand final, even managed to score a goal while infectious! All team members and parents were advised about a case of measles in the team. Fourteen days later, the team’s two adult trainers (both born between 1966–1980), developed symptoms consistent with measles, saw their GPs but were not tested for measles even though they presented letters explaining their measles exposure. Both men were hospitalised with measles. Their vaccine history was unknown and blood results confirmed they were unimmunised.

The workplace: One football trainer, a truck driver by profession, had been driving around Melbourne making deliveries while infectious.

The personal life: One man’s wife was 39 weeks pregnant. Serology showed she had measles immunity. While infectious, the husband had attended several prenatal classes with his wife. Extensive contact tracing of the maternity hospital was carried out to ensure that all pregnant women who had contact with the case were immune. Unfortunately, the husband was in isolation when his wife went into labour, and missed the birth of his first child.

Discussion

A measles outbreak can touch hundreds of lives and highlights near misses and system failure. This case study demonstrates the far reaching and unexpected consequences of having no immunity to measles. Exclusion, isolation and vaccination kept the vulnerable protected such as the immunocompromised, pregnant and newborns.

As part of the Health Department’s response, 41 exposure sites were actively followed up, involving hundreds of people. The total number of cases linked to the seven-year-old unvaccinated boy who contracted measles on his trip to Taiwan currently stands at 10.
Key messages

- Confirm or encourage measles vaccination for any person born since 1966 - apply this rule to yourself and colleagues – don’t assume you are immune!

- Be alert for measles in patients presenting with a febrile rash.

- Minimise the risk of transmission within your department/practice through immediate isolation of suspected cases.

- Measles virus is very infectious and can remain in the environment for 30 minutes.

- Notify Communicable Disease Prevention and Control at the Department of Health of suspected and confirmed cases immediately on 1300 651 160.

- Take blood for serological confirmation and nose and throat swab for PCR diagnosis.