USING SMS TECHNOLOGY FOR REAL-TIME SURVEILLANCE OF ADVERSE EVENTS FOLLOWING IMMUNISATION

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Background

On-going, post-licensure surveillance of adverse events following immunisation (AEFI) is critical to detecting and responding to potentially serious adverse events in a timely manner. SmartVax is a novel vaccine safety monitoring tool that uses automated data extraction from existing practice management software and short message service (SMS) technology to follow-up vaccinees in real-time. We report on childhood vaccine safety surveillance using SmartVax at a medical practice in Perth, Western Australia.

Methods

Parents of all children below five years, vaccinated according to the Australian National Immunisation Schedule between November 2011 and June 2015 were sent an SMS three days post vaccine administration to enquire whether the child had experienced a suspected vaccine reaction. Affirmative replies triggered a follow up SMS requesting details of any possible reactions via a link to a survey that could be completed on a smartphone. Rates of reported AEFI including fever, headache, fatigue, rash, vomiting, diarrhoea, rigors, convulsions, and local reactions were calculated by age and vaccine type.

Results

Overall, possible vaccine reactions were reported for 239 (8.2%; 95% CI 7.2%—9.2%) of 2,898 vaccination visits. A significantly greater proportion of AEFI, mostly local reactions, occurred following administration of diphtheria-tetanus-pertussis-poliomyelitis vaccine at 4 years of age (77/441 [17.5%]; 95% CI 13.9%—21.0%) compared to the vaccinations given at 2–18 months (p<0.001). Across all time points, local reactions and fatigue were the most frequently reported AEFI.

Conclusions

Automated SMS-based reporting can facilitate sustainable, real-time, monitoring of adverse reactions and contribute to early identification of potential vaccine safety issues. This is critical in maintaining public confidence in the safety of vaccines.

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