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Paper Poster Session
Influenza - clinical epidemiology

Evaluation of the clinical, operational and infection control effects after implementing the Cepheid Xpert Flu Assay in-house at a district general hospital

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Background: Seasonal influenza poses significant operational challenges in the healthcare setting. Prompt containment of infection is imperative to avert outbreaks, their operational impacts and onward transmission to healthcare staff and vulnerable patients. One of the biggest challenges is ensuring timely microbiological confirmation of influenza in District General Hospitals as laboratories are not routinely equipped to perform molecular testing in-house. Rapid diagnosis enables expedited initiation of influenza treatment or prophylaxis, facilitates infection prevention and control measures, allows for efficient and safer allocation of side rooms and thus reduces the risk of transmission to other patients. We implemented the Cepheid Xpert Flu assay for the targeted testing of influenza in our District General Hospital Laboratory and compared the impact with the routine offsite testing at a regional laboratory.

Material/methods: We analysed hospital surveillance data for confirmed cases of influenza; JAC pharmacy (stock) data for the distribution of Oseltamivir/Zanamivir; and MEDITECH/Telepath data for side room allocation and microbiological results for the timeframe 1st November 2014 to 30th April 2015. In-house Cepheid XPert Flu assay was implemented on 30th January 2015. Aspects analysed included incidence of influenza A and B locally, influenza PCR turnaround times, Oseltamivir and Zanamivir prescriptions and side room allocation.

Results: 77 influenza positive patients were identified during the given timeframe.

- 58 patients (75.3%) had influenza A with the incidence peaking at week 6 of 2015, while 19 patients (24.7%) had influenza B peaking several weeks later.
- Prior to the availability of the in-house XPert Flu PCR, influenza testing turnaround times were 3 – 5 days (including transport, testing and reporting), limiting the clinical applicability of these results. Following implementation, results were available within 24 hours (median 14 hours 54 minutes).
- Percentage of empirical influenza treatment (without taking diagnostic samples) decreased from 60% to 40% following introduction of in-house PCR.
- Prior to using the in-house Cepheid XPert Flu Assay antiviral treatment was initiated within 48 hours in 57.9% of patients - this increased to 89.1% post implementation.
- Timely allocation of siderooms for influenza positive patients has increased following implementation of the new method from 84.2% to 89.1%.

Conclusions: Introduction of the in-house Cepheid XPert Flu Assay has demonstrated multiple clinical, operational and infection control benefits. The most important effect was the considerable reduction in turnaround times from swab collection to reporting on the hospital IT system. Availability of results within 48 hours enabled informed clinical decisions regarding antiviral treatment and had an impact on infection prevention and control measures and effective sideroom allocation. It has contributed to the safety of our patient and was well received by clinicians.