Blood culture surveillance
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Introduction
Sepsis is an important cause of hospitalization. It accounted for 30-50% of the mortality. Accurate identification of the underlying pathogen is prudent to the implementation of appropriate treatment to the patient. Various guidelines and measures have been developed in healthcare institutions to prevent the occurrence of blood culture contamination.

Objectives
In order to reduce the occurrence of blood culture contamination the Department of Medicine and Geriatric of Kwong Wah Hospital has developed a set of measures for the staff to follow. These measures are continuous with joint efforts of the staff involved in blood culture collection. This abstract reports our observations and outcome.

Methodology
The “Standard Operation Procedures for Blood Culture Collection” prepared by Infection Control Team of Kwong Wah Hospital was adopted in the Department of Medicine and Geriatrics in mid of 2009. Seminars were organized for staff and newcomers to promulgate the standard, protocol and requirement of blood culture collection. A blood culture audit was also carried out at the same time. An in-house surveillance form was devised to capture data on every blood culture collection and it was used since then. Puncture site and staff with frequent blood culture contamination was identified and staff was advised to adopt appropriate technique to avoid future contamination.

Result
An audit done in 2009 revealed that blood cultures taken from femoral artery were associated with 62.5% of the blood culture contaminations and hence staff was advised to avoid taking blood cultures in these sites. From January 2010 to November 2014 the Department of Medicine and Geriatrics had taken 27,338 blood cultures. 417 of these blood cultures were considered to be contaminated. The overall blood culture contamination rate for the study period was 1.53%. The mean yearly contamination rates for the year 2010, 2011, 2012, 2013 and 2014 were 2.40% (95% CI 1.91-2.90), 1.72% (95% CI 1.34-2.11), 1.53% (95% CI 1.22-1.84), 1.22% (95% CI 0.92-1.52) and 1.10% (95% CI 0.81-1.39) respectively. Although there was no statistically significant difference in the mean yearly contamination rate in between consecutive years, there was statistically significant decline in contamination rate over the years by Kruskal–Wallis test with a P value of <0.001. The contamination rate of 2014 was significantly reduced as compared with that in 2010 with a P value of <0.001. During the study period the isolation ward of the Department obtained 8,008 blood cultures representing 29.3% of the total blood cultures taken by the Department. 79 (0.99%) of these blood cultures were considered to be contaminated while, at the same time, 338 of the 19,330 (1.75%) blood cultures taken by the other general wards were considered to be contaminated. The contamination rate of blood cultures collected by the isolation ward was statistically significantly lower than that of blood cultures taken by the other general wards with a P value of <0.001. With the establishment of standard protocol, promulgation, education and continuous surveillance it is possible to reduce the incidence of blood culture contamination. Increase in volume of blood culture does not appear to affect the outcome if these measures are followed diligently. Joint and continuous efforts are needed to maintain a low blood culture contamination rate.