Heat stress risk assessment in catering department
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Introduction
Heat stress is a hazard which may endanger worker’s health. In catering department, although no staff injury on duty was reported, the staff is facing hotter environment in summer as one spot cooling machine was malfunctioned. Conventionally, the department monitors the risk by temperature measurement, which is inadequate. Thus, OSH committee set up a working group to tackle the issue.

Objectives
To implement a comprehensive heat stress assessment in catering department.

Methodology
Meeting with manager to understand the work process, engineering and administrative controls in heat stress management was conducted. A site visit to identify hot spot area was done on 19 Aug 2014. Heat stress was measured by using a Heat stress monitor at the hot spot. It measured Wet Bulb Globe Temperature Index (WBGTi). 2 exposure working groups were selected and their work demand was determined. Time-weighted average (TWA) of effective Wet Bulb Globe Temperature (WBGTeff) and metabolic rate were calculated for the groups. The result was compared to American Conference of Governmental Industrial Hygienists (ACGIH) guideline.

Result
3 hot tasks were identified mainly cooking, dish washing and plating. Other non-heat producing task was food preparation. Normally, each staff would perform multi-tasks. All staff wore standard uniform except those working in the dish washing area wore extra PPE. Thus, an additional clothing adjustment factor would be added to the
WBGTeff. The engineering controls included general ventilation and spot cooling system which was located at the cooking area. The one at the dish washing area was malfunctioned. One cooling fan was used at the dish plating area. For administrative control, staff working in dish plating area would have a 5-min break. There was no regular water drinking regimen. Both hot spots and food preparation area were selected for WBGTi measurement. 2 high risk groups were selected for personal monitoring. The WBGTeff for both groups almost reached the Threshold limit value. Besides, the WBGTi was still over the action limit when all heat-producing activities stopped. As a contingency, the door was opened with portable fans installed. It was suggested to implement engineering controls such as shielding the heat source, improving ventilation and replacing the spot cooling system. For administrative controls, minimizing heat-producing activity, regular water drinking regimen and acclimatization program for new staff is recommended. In order to evaluate the effectiveness of the control, a re-assessment is recommended in next summer.