Cost-benefit Analysis of setting up 24-hour Emergency Clinics in Hong Kong Public Hospitals

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Introduction
"Over-crowding" in Accident and Emergency (A&E) departments of Hong Kong public hospitals with primary care cases not only threatens the service quality of emergency care and prolongs patients' waiting time for treatment in the A&E departments, but also causes inefficient utilization of resources and deprives true emergency cases of quality care. A local study suggested that 57% of A&E attendances would have been managed better by general practitioner (GP) care. Reasons of the "over-crowding" include: lacking overnight out-patient services in the community, the convenience of A&E departments and the comprehensiveness of emergency services provided in the departments. As a result, there are urgent needs of patients, the society, A&E departments of Hong Kong public hospitals for a feasible solution to divert non-emergent A&E patients to more appropriate primary care services.

Objectives
To compare the costs and benefits of setting up the proposed 24-hour public emergency clinic inside the A&E department of a Hong Kong public hospital for stable ambulatory non-emergent Categories IV and V A&E attendances by conducting a cost-benefit analysis.

Methodology
Retrospectively compare the costs and benefits of healthcare service provision to A&E attendances in a representative public hospital from Feb 2013 to Jan 2014 by cost-benefit analysis. By estimating the patients' utilization rate of the emergency clinic, the total cost of the proposal is calculated by summarizing the estimated costs of employees' salaries, capital costs, costs of equipments and treatments provided in the clinic in monetary values. The total benefit of the proposal is calculated by
summarizing the estimated benefits of revenues, productivity gain from prevention of prolonged waiting and benefit from emergency diversions in monetary values.

**Result**

With the patients' utilization rate of the clinic estimated as 44%, the total cost of the proposal is estimated as HKD $868,863 per month; while the total benefit is estimated as HKD $2,366,695 per month. The net benefit is estimated as HKD $1,497,832 per month with cost-benefit ratio greater than 2.72 of total benefit over total cost. Conclusion: The proposal of setting up the 24-hour public emergency clinic in the A&E department is economically beneficial, and the results are generalizable to A&E departments of other similar acute urban public hospitals in Hong Kong.