Application of Integrated Care Program (Hospitalists) in Emergency Department in Taiwan: 4-year Experience

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Purpose
The Ministry of Health and Welfare tried an innovative integrated care model at wards (Hospitalist-HOS) since 2014, and the efficiency was good in general. Not only increasing patients’ satisfaction but also saving medical cost in performed hospitals. We established this integrated model at emergency department (ED) with similar methods to see weather this HOS works at ED with good outcome.

Method
A holistic care unit consisted of eight subspecialists was organized at ED with shifting-work care in 24 hours to care all the patients prepared for hospitalization. Compared to the efficiency and outcome before and after implementation of HOS, we collected 4-year data retrospectively with proper analysis to realize weather this care model working for pre-hospitalized patients in several parameters as length of stay, over-waiting (>48 hours) period, the mortality, 6- and 24-hour prognosis after admission to wards, saving medical cost and satisfaction questionnaires, etc.

Results
Totally 4-year data enrollment from August-2012 to July-2016 was analyzed (Figure 1) (in sum 520,409 people visited ED, 111,949 hospitalized). The maximal decline of waiting time reached 21.75% in 4-year estimation (peaked in 2015-year), the over-waiting period (>48hours) at ED decline by 47.3% (peaked in 2016-year)(Figure2), the mortality declined by 62.5% (peaked in 2014-year) (Figure 3), the 6- and 24-hour deteriorated outcome after admission declined by 96.43% (peaked in 2016-year) and 87.5% (peak in 2015-year), even no pts transferred to ICU in mid-2016 (Figure 4), with statistically significant (ANOVA, p<0.05 individually). Pre-hospitalized patients at ED after treated during waiting period without admission was 2.21% (average 55 persons discharged directly) (Figure 5). The rate of 3-day re-visited ED was 1.98%. The case manager traced patients after discharge with (peaked in 2016-year)(Figure2), the mortality declined by 62.5% (peaked in 2014-year) (Figure 3), the 6- and 24-hour deteriorated outcome after admission declined by 96.43% (peaked in 2016-year) and 87.5% (peak in 2015-year), even no pts transferred to ICU in mid-2016 (Figure 4), with statistically significant (ANOVA, p<0.05 individually). Pre-hospitalized patients at ED after treated during waiting period without admission was 2.21% (average 55 persons discharged directly) (Figure 5). The rate of 3-day re-visited ED was 1.98%. The case manager traced patients after discharge with 85.4% (Figure 6), these patients returned back to outpatient clinic with follow-ups was 81.3% by obedience (Figure 7). The medical law-sue events declined from 67 to 39 cases in past years after HOS implementation (Figure 8). The questionnaires for pre-hospitalized patients in disease explanation, service attitudes, symptoms relief and global impression about care management all reached high satisfaction in two different time investigation (1st in 2013 and sample sizes 427; 2nd in 2014 and sample sizes 459).(Figure 9)

Conclusion
Distinguished from this care model at wards, HOS established at ED still can diminish over-crowding patients at emergency room, shortened waiting time for hospitalization, declined mortality rate, improved post-hospitalized quality of care, saved medical cost, and improved patients satisfaction. By bridging care between post-emergency and pre-hospitalized period, it can assure persistent care without lag or delay. Although this data came from a single medical center, and compared to the efficacy value of HOS at wards, it still showed good efficiency and outcome of HOS setting at ED.

key words: hospitalists, emergency department, quality of care, patient safety, efficiency and outcome