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The Efficiency of Applying Short Message Service for Surgical Patient's Families

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Abstract

This study was to build a web-based short message service (SMS) system in operating room. We approached the efficiency of SMS for patient's families during the time series of surgery process (pre-, intra-, and post-operation). In this study, 322 participants received 685 text messages. The findings show the usability of SMS applied to the clinical care, especially for reducing family's anxiety and improving their satisfaction. Therefore, it is suggested to exploit the effectiveness of personal medical care.

Keywords:

anxiety, surgical patient, short message service

Introduction

Patient's families usually appear stressful and helpless because of lacking information about the patient during the waiting time. The scholars also discovered high-level anxiety in both patient themselves and their family throughout the waiting period [1]. In order to achieve a good surgical patient management, it's possible to apply a novel technique for the communication between the hospital and patient/patient's family. Cellular phone is a well-established technology of communication in hospitals and commonly used with many benefits in patient care [2, 3, 4].

Materials and methods

We conducted the project in the OR that served about five hundred patients every month. The data was collected from HIS database, contents of storage text messaging, satisfaction questionnaires and anxiety scale. The investigators used available proprietary web-based software operating on Office 2003 Microsoft Windows personal computer to enter, edit, and store messages for delivery to the patients in the operation room (every8D.com, Taiwan). Outside of the operation room, mobile telephone and smart phone were considered as endorsement. The content of messages and exact time were recorded in the web database (figure1).

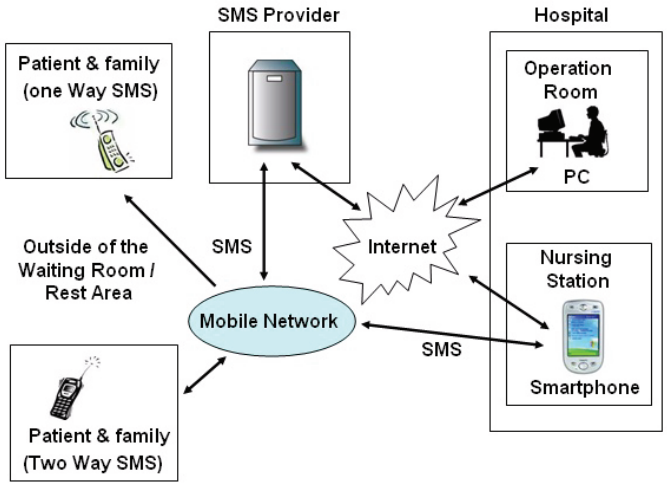

Figure 1 - The system architecture of web-based SMS system for surgical patient families

Results

The operation room totally served three hundred twenty-two participants who received 685 text messages and 283 participants answered satisfaction questionnaires (87.89) between August 20 and October19, 2005. The participants were sent 2 to 5 text messages. In all questionnaire items, the statistic data described phenomena that participants' satisfactions were high level (mean4.3, SD.69).The families reported that they were very anxiety during the waiting period when the patient in OR, the mean of anxiety score were 7.8, and 96.4% families reported the SMS could reduce their waiting anxiety(mean=2.3 ,SD=.12). About time management, 92% participants were strong agreed that the SMS provided an opportunity to arrange their time, and they did not always stay at the waiting area.

Table1 - Demographic characteristics of participants (n=283)

Variable	n	%
Source		
Outpatient	29	10.3
Inpatient	154	89.7
Patient age		
<18	12	4.3
18,<40	98	34.6
40	173	61.1
Patient gender		
Female	167	59.0
Male	116	41.0
Operation duration		
<1hour	52	18.4
>1hour ,2 hours	45	15.9
>2hours,4 hours	162	57.2
>4 hours	24	8.5
Family age*		
<18	10	3.6
18,< 40	147	51.9
40	126	44.5
Family gender*		
Female	159	56.2
Male	124	43.8
Family's education status*		
Primary+ secondary	54	19.1
High school and higher	229	80.9

* Family who received the text messages

Table 2 - Patient/family satisfaction (n=283)

Topic	mean	SD
Better time arrangement	4.3	.63
Waiting at other place	4.3	.72
Reduce waiting time	4.3	.67
Get real time information	4.5	.61
Reduce family's anxiety level	4.5	.59
Reduce family's business delay	4.4	.63
Reduce patient's anxiety for surgery	4.3	.72
Reduce patient's anxiety for family waiting	4.4	.69

Table 3 - Text messages of patient/family's opinion (n=283)

Variable	mean	SD
Pre-operation identify	4.4	.58
Patient name	4.4	.59
Disease diagnosis	4.3	.65
Surgery site	4.3	.68
Surgery category	4.3	.68
Surgery time, initial/ending	4.4	.59
Intra-operation information	4.4	.58
Emergency information	4.4	.66
Surgery status information	4.6	.55
Surgery finish information	4.6	.52
Post-operation follow up	4.4	.53
Clinic information	4.6	.55
Education information	4.3	.63
Medication reminder	4.5	.53

Conclusion

A web-based SMS build a general communication system between health delivery and people. Because the internet and cellular phone are universal, it's much easily and smoothly to develop a SMS system in hospital. It's believed that SMS is feasible to be applied in other situations such as outpatient department, medicine delivery and health information supplies.

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