

# The Efficacy of Online Communication Platforms for Plastic Surgeons Providing Extended Disaster Relief

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## Abstract

**Background:** Immediately after the January 2010 earthquake in Haiti, University of Miami Miller School of Medicine established a field hospital providing extended disaster relief.<sup>1</sup> Plastic surgeons throughout the United States provided services on a weekly-basis for a period of 5 months. Procedures encompassed soft tissue wounds, craniomaxillofacial trauma, reconstruction of early and late burn wounds and contractures. As an innovative approach to improve overall surgical care and promote awareness of the crucial role played by plastic surgeons, an online communication platform (OCP) was designed.

OCP is a web-based application combining web logging, picture uploading, news posting, and private messaging systems into one platform. The purpose of this study is to analyze use of OCP during disaster relief.

**Methods:** All surgeries performed from January 13 to May 28, 2010, were documented. A password protected OCP was established and web traffic was documented. An anonymous, web-based, 17-question survey was administered to eighteen plastic surgeons that had used the OCP after 1 year to assess attitudes and perceptions.

**Results:** From January 13 to May 28, 2010, 413 operations were performed at the field hospital (Table 1). 46.9% of the overall number of procedures were performed by the plastic surgery teams. The OCP has had 737 visits with 268 absolute unique visitors. Of 17 plastic surgeons, 71% responded that OCP improved follow-up and continuity of care by debriefing rotating plastic surgery teams (Table 2). 100% claim OCP conveyed the role of plastic surgeons with the public.

**Conclusions:** Results demonstrate the necessity and usefulness of OCP for plastic surgeons during disaster relief. OCP permitted the secure exchange of surgical management details, follow-up, photos, and miscellaneous necessary recommendations. Experiences and field hospital progress posted assisted in generating substantial awareness among our colleagues and the general public regarding the significant role and contribution played by plastic surgeons.

<b>TABLE 1. Surgical procedures of injured inpatients at field hospital after earthquake – Port-au-Prince, Haiti, January 13 – May 28, 2010<sup>2</sup></b>						
<b>Characteristic</b>	<b>Earthquake-related injury</b>		<b>Other Injury</b>		<b>Total</b>	
	No.	(%)	No.	(%)	No.	(%)
Total no. of patients with injury diagnosis	162	(27.9)	419	(72.1)	581	(100)
<b>Surgical procedures for injured patients</b>						
Plastic/Skin graft/ Incision and drainage/ Wound debridement	76	(46.9)	147	(35.1)	223	(38.4)
Orthopedic	42	(25.9)	54	(12.9)	96	(16.5)
Amputation	21	(13)	24	(5.7)	45	(7.7)
Neurologic and spine	9	(5.6)	13	(3.1)	22	(3.8)
Gastrointestinal	0		12	(2.9)	12	(2.1)
Other	4	(2.5)	11	(2.6)	15	(2.6)
Total	152	---	261	---	413	---

<b>TABLE 2. Online Communication Platform Survey Results</b>		
<b>SURVEY QUESTIONS*</b>	<b>YES (%)</b>	<b>NO (%)</b>
<b>General Characteristics: Online communication platform must provide a safe, accessible mode of communication with user-friendly navigation.</b>		

Was the online communication platform accessible at all hours of the day?	100%	0%
Did password protection provide a sufficient level of protection for the information exchanged?	94%	6%
Were common tasks on the online communication platform user-friendly?	71%	29%
Were tasks requiring more than 5 steps on the online communication platform user-friendly?	65%	35%
Did the online communication platform require minimal computing experience?	88%	12%
<b>Communication Characteristics: Online communication platform must provide an effective, real-time communication modality that allows exchange of necessary surgical management and follow-up details accessible to all members to contribute to and to receive.</b>		
Did the online communication platform provide an effective and quick means of exchanging information between team members, regardless of their location?	59%	41%
Was surgical management of patients improved by employing the online communication platform to exchange details, suggestions, and options regarding patient management?	35%	65%
Did the online communication platform improve follow-up and continuity of care by debriefing the new rotating teams of plastic surgeons regarding patient details?	71%	29%
Was the 24-hour accessibility useful in reducing information exchange turnover time?	71%	29%
Did the online communication platform allow exchange of pre-operative and post-operative photos more efficiently than email?	59%	41%
Was the online communication platform more efficient and useful than traditional sign outs?	18%	82%
Did you experience any ambiguity or confusion during your communications on the online communication platform due to the non-vocal modality of information exchange?	24%	76%
<b>Miscellaneous Characteristics: Online communication platform must provide an efficient means of sharing recommendations for traveling, surviving, and operating during disaster relief efforts in variable foreign conditions.</b>		
Was the online communication platform useful in preparing the traveling plastic surgeon in regards to traveling, food, and living conditions in foreign countries?	88%	12%
Was the online communication platform useful in avoiding potential bias associated with word of mouth recommendations?	71%	29%
<b>Awareness Characteristics: Online communication platforms must be able to communicate with the public the significant role and personal experiences of plastic surgeons during disaster relief.</b>		
Did the online communication platform convey the role of plastic surgeons during disaster relief in a positive light?	100%	0%
Was posting personal experiences on the online communication platform an effective means of sharing new perspectives gained with the public?	82%	18%
Would you support the use of an online communication platform for future disaster relief programs?	100%	0%

*Response rate: 94% (17/18)
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