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## Perceptions of Impact of 911 Call Center Technology on Patient Safety

**Monday, June 25, 2018**

**06:45 PM - 08:15 PM**

📍 *Washington State Convention Center - Exhibit Hall 4AB*

### Poster Board Number

📌 C-272

#### Research Objective:

Activation of the medical emergency services system begins with a call to 911. Performance on call receivers can directly impact patient safety, especially for life threatening emergencies such as cardiac arrest (1). New technologies, such as cell phone texting to 911 (text2911), automobile crash notification (OnStar), pre-registration of household emergency information (Smart911) and ability to send videos of an incident (Visuals), are being implemented across the country as part of the Next Generation 9-1-1 (NG911) initiative. NG911 technologies provide additional or alternative avenues other than voice for contacting 911.

#### Study Design:

A cross-sectional survey that included questions on the perceived impact of new technologies on call receiver performance, responder safety and patient safety was administered as part of a longitudinal study. Survey items (using a 7 point Likert-type scale) included questions regarding the perceptions of 911 employees on the impact of the technologies on: the quality and usefulness of the information in a call; time it takes to process a call; quality of job performance; and helpfulness of each technology for decision making, ability to convey pre-arrival instruction, ability to protect the safety of responders and ability to protect safety of the public.

#### Population Studied:

Emergency call center employees (n=165) from 23 call centers across the United States.

#### Principal Findings:

The impact of text2911 on performance was uniformly perceived more negatively than Onstar, Smart911 or Visuals (table 1).

*Table 1. Perceptions of text2911, Onstar, Smart911 and visuals on performance and safety compared to voice calls. Responses were on a 7 point Likert-type scale ranging from 1 = much worse to 7 = much better.*

	Text2911		Onstar		Smart911		Visuals	
	Mean	(95% CI)	Mean	(95% CI)	Mean	(95% CI)	Mean	(95% CI)
Helpfulness	3.2	(3.0, 3.4)	3.9	(3.7, 4.1)	4.3	(4.1, 4.5)	3.9	(3.7, 4.1)
Information	2.5	(2.3, 2.7)	3.6	(3.4, 3.8)	4.4	(4.1, 4.7)	4.2	(3.9, 4.4)
Instructions	2.6	(2.4, 2.8)	3.4	(3.2, 3.6)	3.8	(3.6, 4.1)	3.4	(3.2, 3.7)
Interactions	2.8	(2.6, 3.0)	3.5	(3.3, 3.7)	4.1	(3.8, 4.3)	3.4	(3.1, 3.6)

Performance	3.7	(3.5, 3.8)	3.9	(3.8, 4.1)	4.2	(4.0, 4.3)	3.9	(3.7, 4.1)
Safety of Public	3.2	(3.0, 3.4)	3.7	(3.5, 3.9)	4.2	(4.0, 4.4)	3.9	(3.7, 4.2)
Safety of Responders	3.2	(2.9, 3.4)	3.7	(3.5, 3.9)	4.2	(3.9, 4.3)	4.1	(3.9, 4.4)
Timeliness	2.1	(1.9, 2.3)	3.6	(3.4, 3.8)	3.6	(3.4, 3.8)	2.7	(2.5, 3.0)

### Conclusions:

Text2911 in particular offers the biggest challenge for patient safety and performance. For some types of emergencies text2911 offers a communication channel that would otherwise be unavailable (for example, in domestic violence situations). In these situations text2911 increases the ability of the EMS system to respond and provide appropriate care. In situations where other information channels are available (i.e. voice calls) text2911 offers a much slower and less information rich method of communicating with 911.

### Implications for Policy or Practice:

Call centers need to anticipate the impact of NG911 technologies, especially text2911 on performance and patient safety, and take steps to ensure that patient safety is not compromised.

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