Initiators of Interruption in Workflow: The Role of MDs and RNs

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Abstract

The healthcare environment has been characterized as interrupt-driven with medical doctors (MDs) and registered nurses (RNs) receiving many interruptions during a shift. Previous research studies have focused on the recipient because of the negative impact on task performance. It is equally important to understand the initiator of an interruption to help design strategies to lessen the number and the possible negatives effects of interruptions. The purpose of this instrumental study was to examine MDs and RNs as initiators of interruptions. Results of this study indicate that MDs and RNs initiate interruptions most often through face-to-face situations and the telephone. Strategies to successfully manage interruptions must consider both the role of initiator as well as the recipient in an interruption event.

Background

- The healthcare environment has been characterized as interrupt-driven.
- MDs and RNs are the recipients of interruptions through:
  - face-to-face conversations
  - with co-workers
  - telephone calls
  - email messages
  - alarms and alerts from medical devices.
- Research studies have examined the role of recipient because of the negative impact on task performance.

Purpose

- To examine the role of MDs and RNs working in a level one trauma center as initiators of interruptions.

Methods

- Study Design: The design was an instrumental case study.
  - An instrumental case study is an inductive approach used to gain an in-depth understanding of a phenomenon.
- Subjects: A convenience sample of MDs and RNs.
  - Participation was voluntary.
  - Written consent and community consent was obtained.
- Setting: All observations were made in the trauma section of a large urban teaching hospital.
- Study Protocol: The MDs and RNs were shadowed with observations being recorded on a minute-by-minute basis.
  - Observations automated using a semi-structured field note.

Methods

- Data Analysis: Data analysis of the field notes was supported using NVivo© and MacSHAPA.
- The data was analyzed using the Hybrid Method to Categorize Interruptions and Activities (HyMCIA).
  - HyMCIA was developed through the hybridization of a deductive *a priori* classification framework with the provision of adding new categories discovered inductively in the data using grounded theory.
- Two coders analyzed the data for agreement of tasks and interruptions. A percent agreement score was calculated.

Methods

- Data Collection: Observers typically worked in teams of two and recorded their observations using a semi-structured field note form implemented on Tablet PCs.
- Subjects were shadowed for a minimum of 2 hours but not more than 12 hours.
- Recording of observations began when the subject had completed the informed consent.
- Observations were recorded on a minute-by-minute basis.

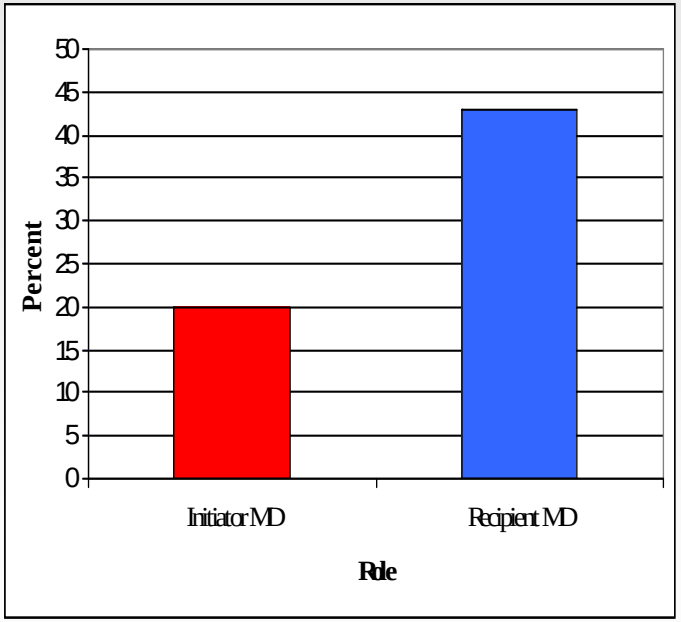
Findings

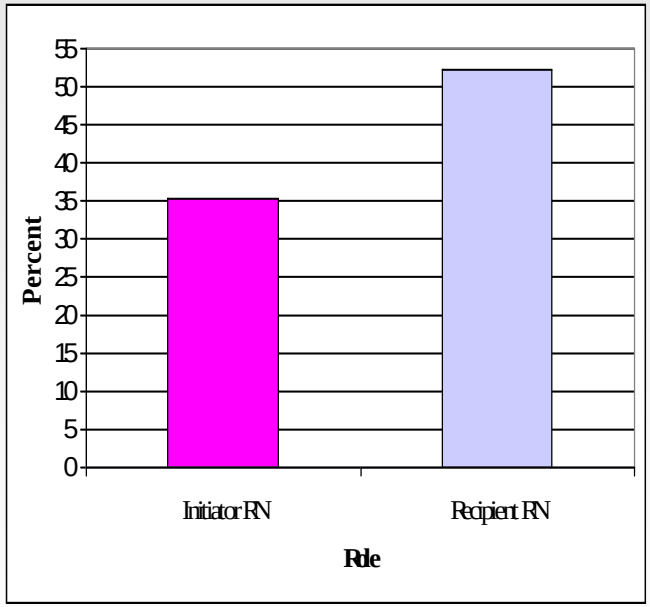
- Five attending trauma physicians were observed for a total of 29 hours, 31 minutes.

- Eight RNs were shadowed for a total of 40 hours, 9 minutes.

Findings

Initiators and Recipients of an Interruption





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Findings

A Role Based Taxonomy of Interruption

Initiator	Recipient
Initiator – a person who initiates an interruption	Intended Recipient - the person to be interrupted
Initiator Blocked - the initiator is blocked from initiating an interruption	Indirect Recipient – the incidental recipient of an interruption; i.e., talking with another which conversation suspends the original activity
Initiator Delayed – the initiator is delayed in initiating an interruption	Unintended Recipient - not the intended recipient of an interruption; i.e., receiving a phone call that was incorrectly dialed
	Recipient Delayed – the intended recipient postpones an interruption
	Recipient Blocked – the intended recipient does not accept the interruption

Conclusions

- These results show that MDs and RNs both initiate and receive interruptions.
- The development of strategies to decrease or mitigate the negative effects of interruptions requires a better understanding of why the interruption was initiated.
- Failure to consider why the interruption was initiated will lead to the formulation of ineffective strategies to manage interruptions.
- The introduction and use of technology in the clinical setting to manage interruptions must be critically evaluated so that MDs and RNs do not initiate more interruptions.

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