

# Understanding and Mitigating the Distractions/ Interruptions Experienced in the OR

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## Definition

**Multiple definitions** exist for distractions/interruptions in healthcare literature (Grundgeiger & Sanderson, 2009)

- ❖ Hindered knowledge accumulation and comparison across studies

**Widely used definitions:** (Healey et al, 2007)

- Distraction: *Observed behavior such as orienting away from a primary task or verbally responding to a secondary task with no break in primary task*
- Interruption: **A clear break in primary task activity due to a distraction**

## Prevalence of Interruptions in Healthcare

Interruptions are **frequent** (Rivera-Rodriguez & Karsh, 2010, Sevdalis, 2014, Persoon et al, 2011, Westbrook, 2010, Kosists, 2011, Sasangohar et al, 2014 )



- Large variability in interruption rates due to:
- Unit characteristics
  - Adopted definitions
  - Nature of different departments

## Relation to medical errors?

**Interruptions may cause medical errors** (Kohn, et al, 2000)

- ❖ Limited evidence on the relationship between medical errors and distractions/interruptions (Grundgeiger & Sanderson, 2009)

**Interruptions can be positive:** (Rivera & Karsh, 2010, Grundgeiger & Sanderson, 2009)

- May convey important information about patient safety
- May decrease boredom for low attention tasks (Fisher et al 1998)

- ❖ **A holistic approach:** Context needs to be considered, not just prevalence

## Mitigation

**Physical and Procedural Changes:**



- Blocking (Raban&Westbrook, 2014)
- No interruption zones
- Do not disturb vests
- Supporting resumptions
- Whiteboards (Westbrook et al, 2010)
- Automate error-prone tasks
- Bar-coding (Westbrook et al, 2010)

**Training/Cultural Changes:**

- Well-coordinated teams (Sevdalis et al, 2014)
- Knowing one's self and active handling (Sevdalis et al, 2014)
- Sympathetic relationship (Persoon et al, 2011)

*e.g. how comfortable a resident feels asking the team to switch off the radio*

- ❖ **Mitigation technique should be matched to the problem**

## Research Gap:

- No standards in definitions of distraction and interruption
- Limited evidence on the relationship between distractions/interruptions and errors
- Systems approach in interruption-error relationship
- Mitigation techniques specific to different departments

## Investigating Interruptions in Surgery

- Naturalistic data is being collected in operating rooms at St. Michael's hospital (Operating Room Black Box Data)
- Statistical analyses on the naturalistic data could help:
  - identify which distractions/interruptions may be related to surgical errors
  - mitigate the most detrimental ones with a suitable mitigation technique

### Operating Room Black Box

Multiview, high-resolution images of

- Audio/video of OR
- Endoscopic camera/wearable technology
- Patient physiology,
- Environmental factors
- Recording devices

Raw, **unbiased** recordings – potential to capture more insights



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