

## Introduction

- In robot-assisted surgery, the surgeon is spatially isolated from the OR team, which can compromise interaction between the surgeon and the bedside assistants due to lack of visual cues.
- We investigated the feasibility and utility of providing robotic surgeons with a tablet with live video feed of the patient's bedside, mounted on the console – "BedSide Live", and whether it can improve surgical work flow.

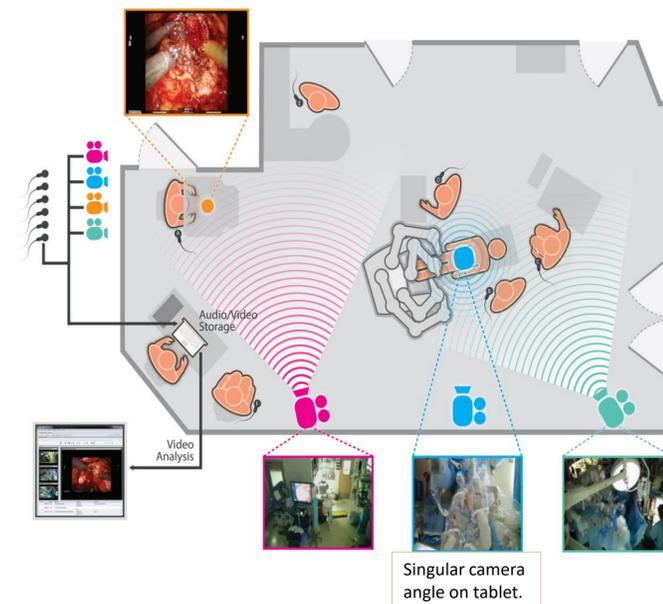
## Methods

- All members of the operating room environment were audio and visually recorded as part of the TechnoFields project via overhead cameras and lapel microphones (Tiferes et al, J Surg Ed, 2016).
- 10 historic RARPs by three surgeons without BedSide Live were recorded and previously reported (Allers et al, BJUI, 2016).
- 10 prospective BedSide Live RARPs by one surgeon were recorded
- Audio and visual recordings were transcribed for interruptions of the surgical flow.

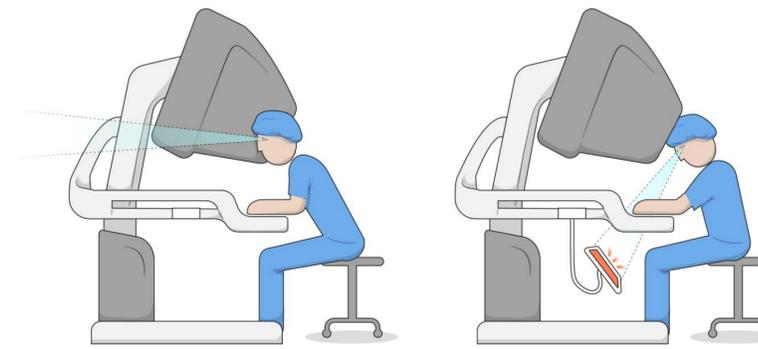
## Methods

Categories of Interruptions	
Category	Description
Equipment/Technology	Camera related (camera clean or lens change); instruments (addition, removal, or change); suture/stapler/clip application
Supervision/Training	Console switching between the lead surgeon and surgical trainee; teaching
Procedure-Specific	Events necessary for the surgical procedure
Nonprocedural-related	Personal conversations and phone calls, events not pertaining to the procedure

### Camera Angles Streamed on Tablet



### Historic vs. BedSide Live



## Results

Interruptions of Bedside Live vs. Historic Cases			Interruptions by Category		
	BedSide Live	Historic	Category	Total Interruption Duration/Surgery, time (secs), mean (%)	
				BedSide Live	Historic
Operative time (min), median (IQR)	102 (89-116)	152 (139-231)	Equipment/Technology	253 (57)	527 (54)
Duration of interruptions (min), median (IQR)	6.2 (5.7-9.1)	9.9 (7.1-20.5)	Supervision/Training	122 (28)	274 (28)
% of Interruptions of Total Surgery	7	9	Procedure-Specific	55 (12)	161 (17)
			Nonprocedural-related	12 (5)	11 (1)

## Conclusion

- Interruptions in surgical flow were lower in the BedSide Live group.
- Main causes of surgical flow interruptions in BedSide Live vs Historic cases were comparable.
- The use of BedSide Live was feasible, and may provide benefits for the surgeon and improve surgical flow during RAS.