

Background

Miscommunication in the operating room (OR) contributes to surgical harm. The causes and effects of OR miscommunication have not been adequately explored, thus patient injuries due to miscommunication still occur frequently. If the evidence and context of miscommunication can be better elucidated, mitigation strategies can be implemented to prevent patient harm.

Objective

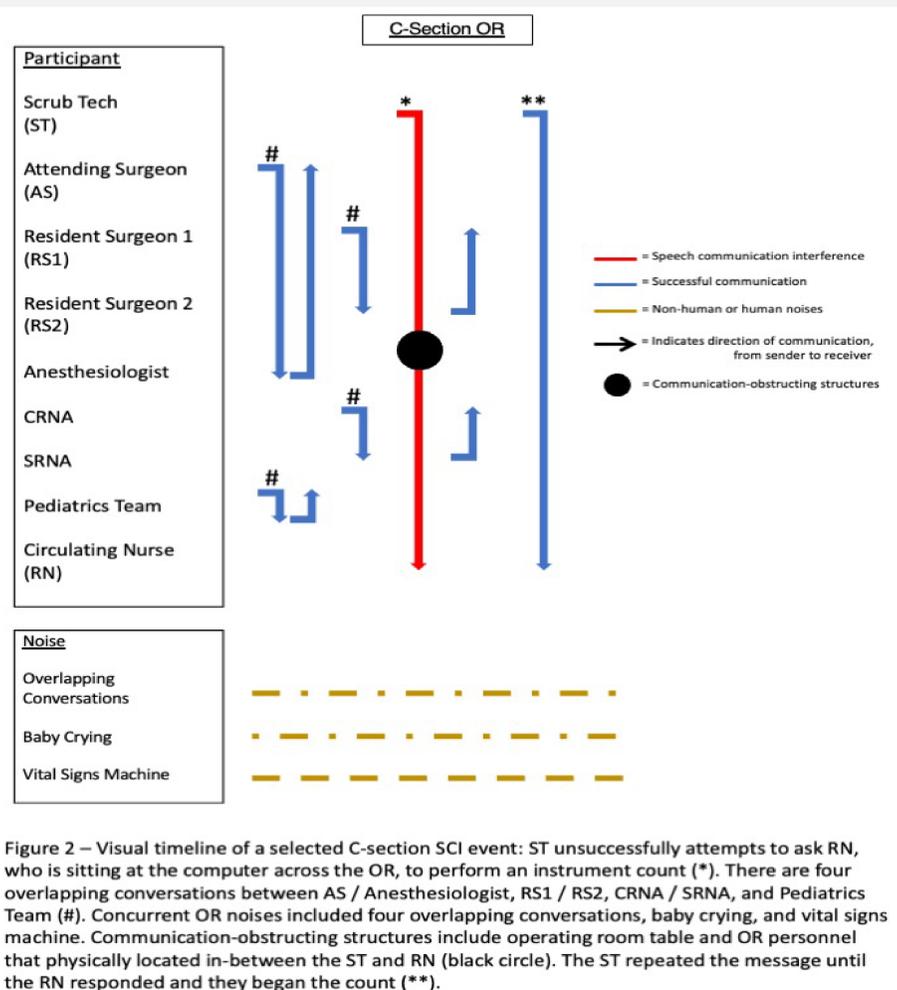
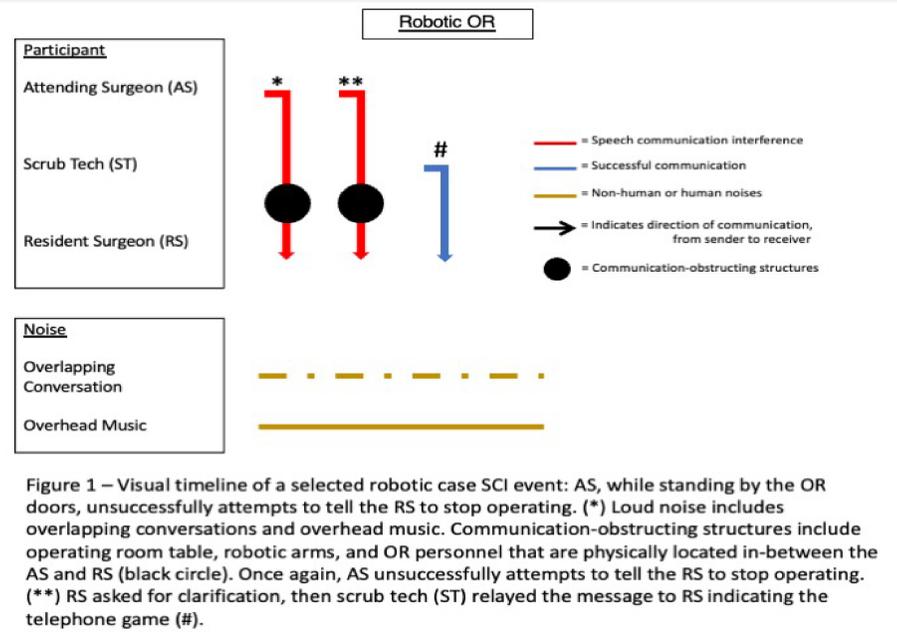
This study aimed to illustrate the evidence and context of miscommunication in the OR in robotic and C-section surgical cases.

Methodology

Miscommunication was studied in 78 robotic cases and 28 C-sections by observers trained in Speech Communication Interference (SCI), defined as disrupted discourse between OR team members. The observers collected field notes describing the surgery portion, participants, evidence, context, and effect of each SCI event. Evidence of SCI events included message sender repeating themselves, message receiver not responding, and/or receiver asking for clarification. Context of SCI events included loud noises, overlapping conversations, or the receiver focused on a concurrent task. Case delays and near misses were recorded. End-of-surgery interviews were conducted with SCI event participants to support the context. Field notes and end-of-surgery interviews were transcribed which were then reviewed by a multidisciplinary team.

Figure 3: Speech Interference Instrument

Time: _____	<u>Reason for Speech Interference</u> (check all that apply)
<u>Portion of Surgery</u>	<input type="checkbox"/> Loud Noise
<input type="checkbox"/> Setup	<input type="checkbox"/> Overlapping Conversation
<input type="checkbox"/> Intubation	<input type="checkbox"/> Multitasking
<input type="checkbox"/> Time Out	<input type="checkbox"/> Not paying attention
<input type="checkbox"/> Extubation	<input type="checkbox"/> Other
<u>Describe event:</u> _____	<u>Effect of Speech Interference</u>
<u>Participants:</u> _____	<input type="checkbox"/> None
<u>Evidence of Speech Interference</u> (check all that apply)	<input type="checkbox"/> Case Delay
<input type="checkbox"/> Receiver did not respond	<input type="checkbox"/> Near Miss
<input type="checkbox"/> Sender repeated themselves	<input type="checkbox"/> Surgical Error
<input type="checkbox"/> Receiver asked for clarification	Describe: _____
<input type="checkbox"/> Other	<u>Hotbox interview:</u> _____
Describe: _____	
<u>Context:</u> _____	



Results

1 SCI from a robotic case and 1 SCI from a C-section case were selected to illustrate OR miscommunication. The robotic SCI occurred during dissection in an inguinal hernia repair. The resident surgeon (RS) was in the robot console. Attending surgeon (AS) standing by the OR doors asked RS to “Hold there for a moment”, however, there were overlapping conversations and overhead music occurring in the room. RS did not respond, and AS repeated themselves. RS asked for clarification, then AS asked the room to be quiet and said “RS, pause what you are doing and let me take a look.” RS asked for clarification, then scrub tech (ST) relayed the message to RS.

The C-section SCI occurred during hysterotomy closure, which involves significant blood loss. Prior to completion of hysterotomy closure, the scrub tech (ST) asked the circulating nurse (RN) to perform an instrument count, a safety protocol to prevent retained foreign bodies (e.g. needles, lap sponges, and other surgical tools). Concurrent OR noises included four overlapping conversations, baby crying, and vital signs machine. RN was charting on the computer across the OR. The ST repeated the message until the RN responded and they began the count.

Discussion

In both SCI cases, contributing factors included distance between the sender and receiver, overlapping conversations, and communication-obstructing structures (e.g. OR table, robotic arms, OR personnel). The robotic SCI included the telephone game where the ST relayed the message after the second time RS asked for clarification. The robotic SCI is important because RS continued to operate on the patient despite the AS asking him to stop. The C-section noise environment is unique because of a crying baby, support companions (e.g. father of baby), and 3 separate medical teams conversing (e.g. surgical team, anesthesia team, pediatrics team). The C-section SCI is important because timely, efficient, and correct instrument counts prevent retained surgical instruments.