

“Take a little off the top here”

Ambiguity and vagueness in the operating room

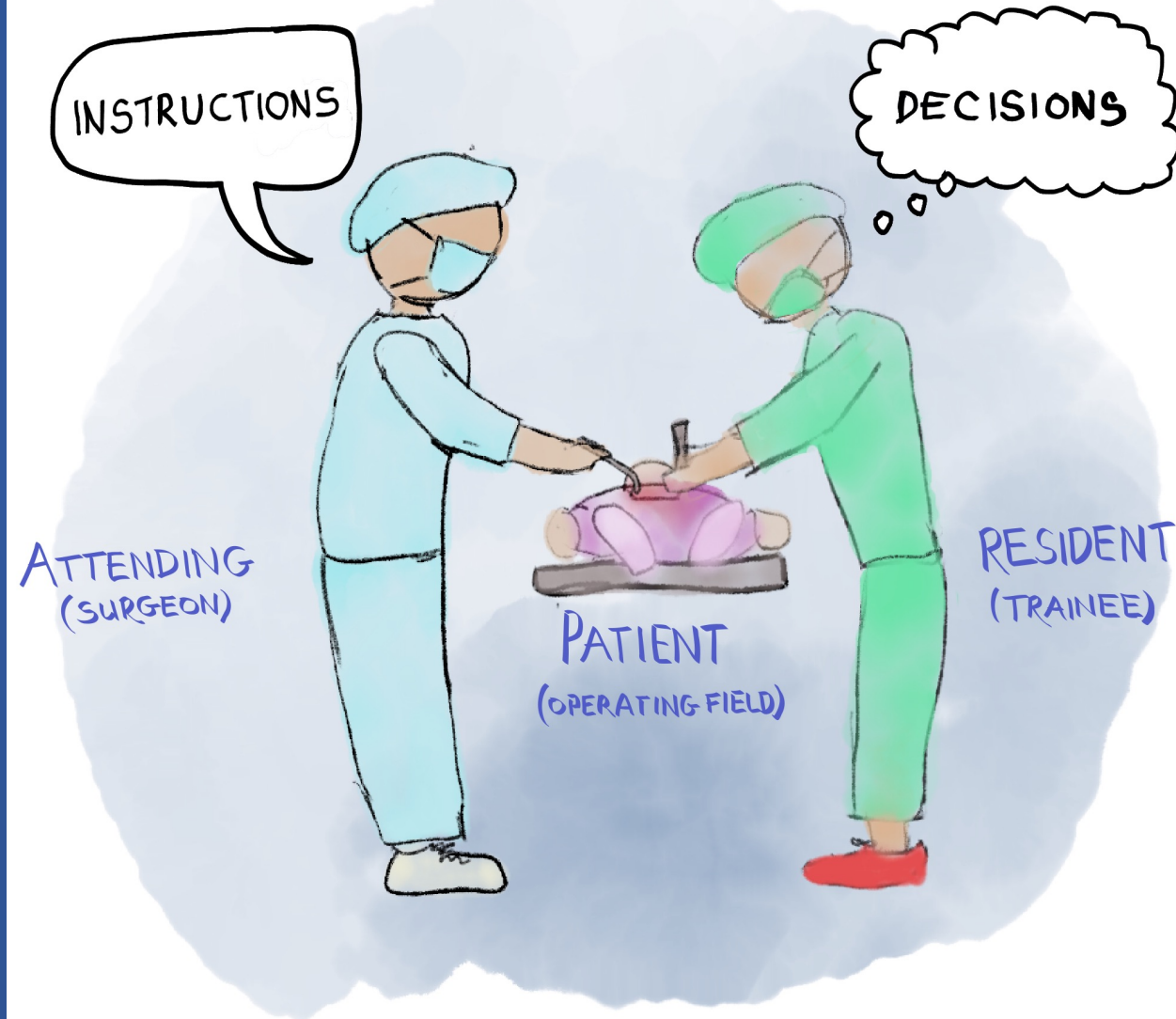
Ashna Mahadev MD, Austin Bachar MD,
Andrew McKenzie, & Gary Sutkin MD



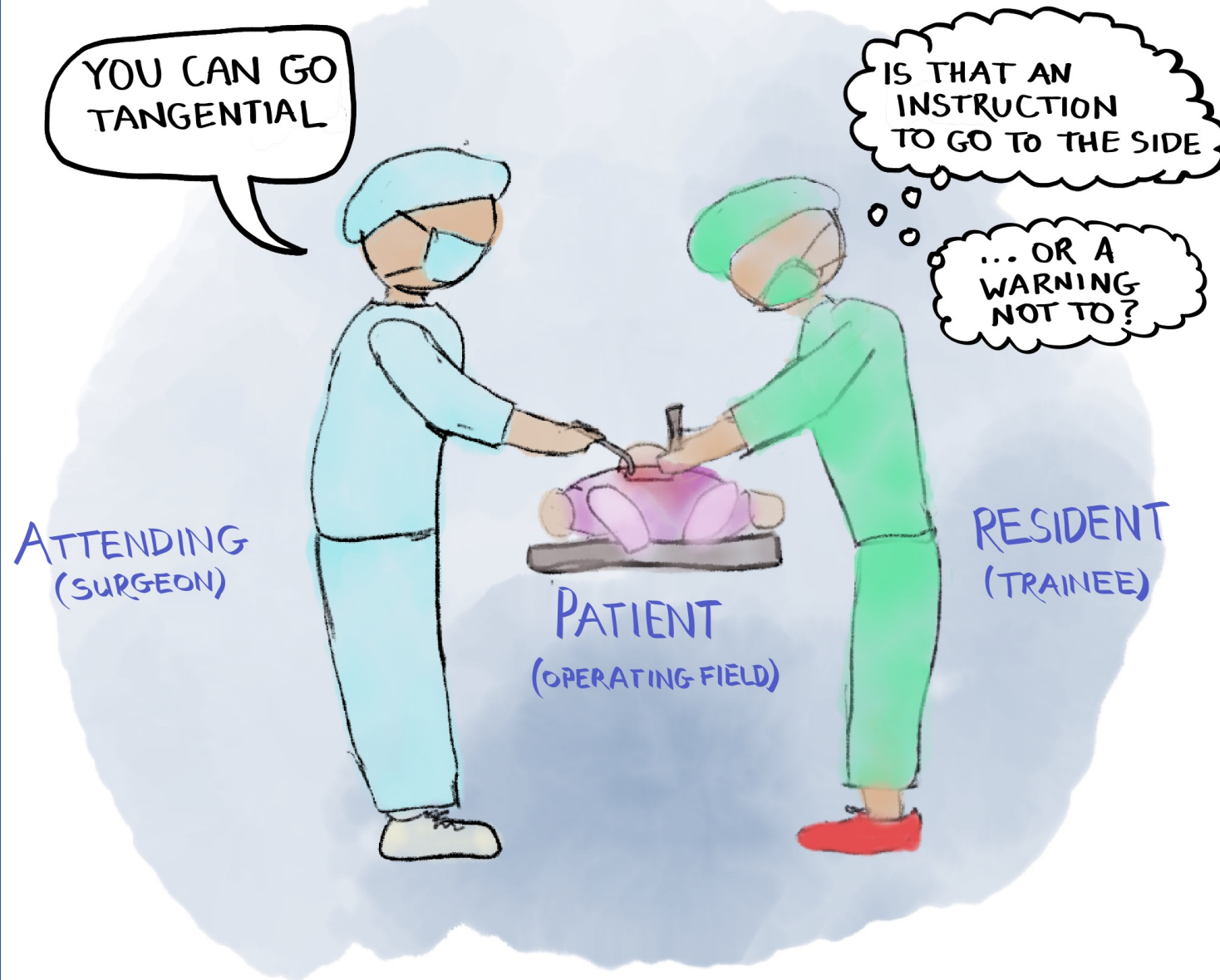
Making surgery safer... with language



How surgical instruction typically works



Surgical language is not 'surgical'



Why that's a problem

Communication involved in 44% of errors

Can we get to the source of misunderstanding?

How common is ambiguity?

Counted possible ambiguities in surgeries

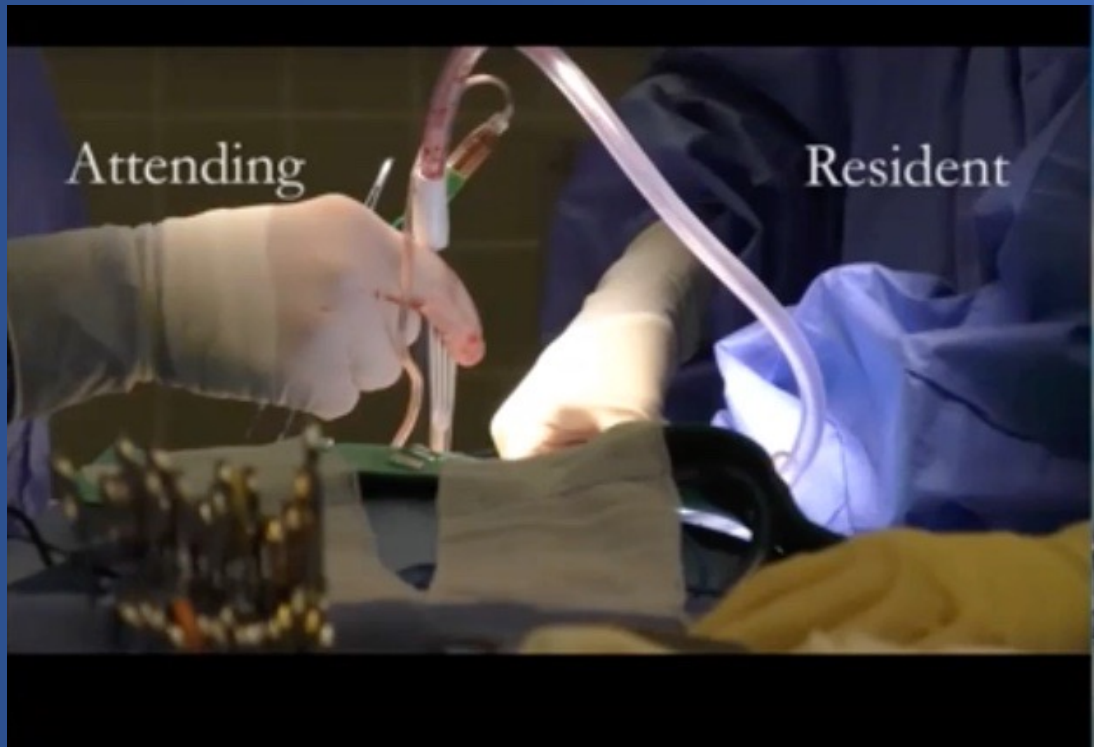
Up to 12 / minute !

“Take a little bit off the top here”

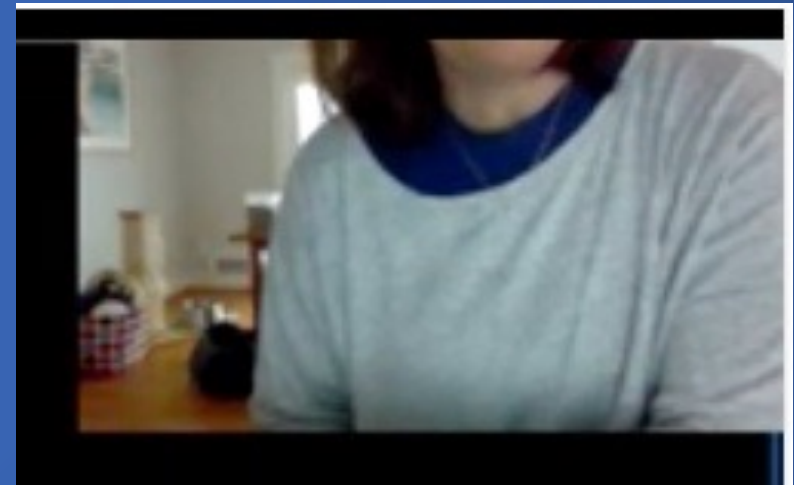
- How much is “a little bit” ? (degree modification)
- Which side is “the top” ? (directional framing)
- Where exactly is “here” ? (deixis)

Is there *actual* misunderstanding?

Filmed 6 surgeries



Interviewed participants



Were they on the same page ?

Directional framing

“pull up”

Which way is up?



Photo credit : Jonathan Borba

Most directional framing is resolved right away

Senior Resident

MS

Resident

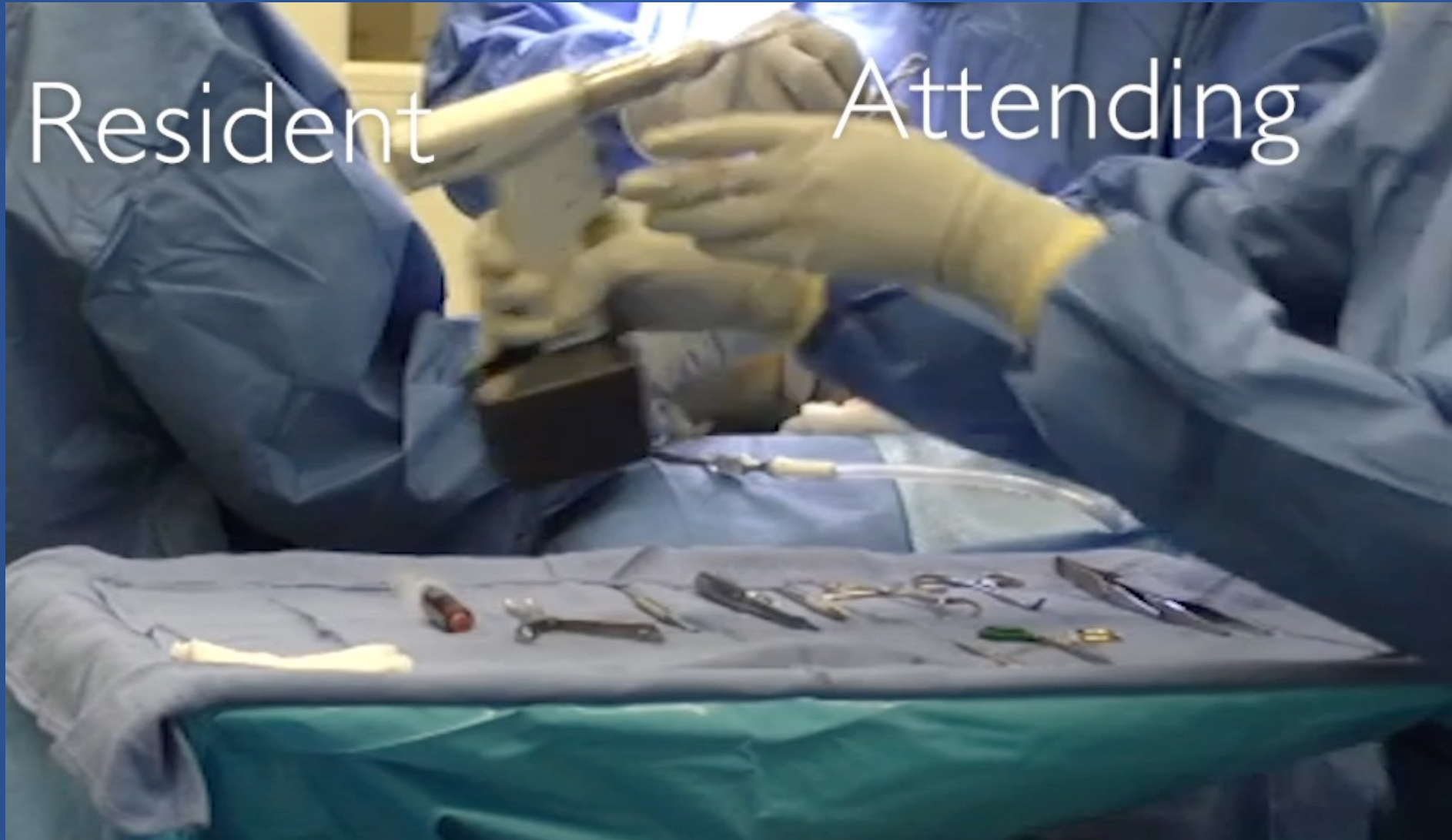
Case 009

*anterior maxillary
resection with a
maxilla bone graft*

[cutting & rebuilding the
roof of a mouth]



But sometimes it is not resolved well



Case 961

*Right fibula
non-union repair*

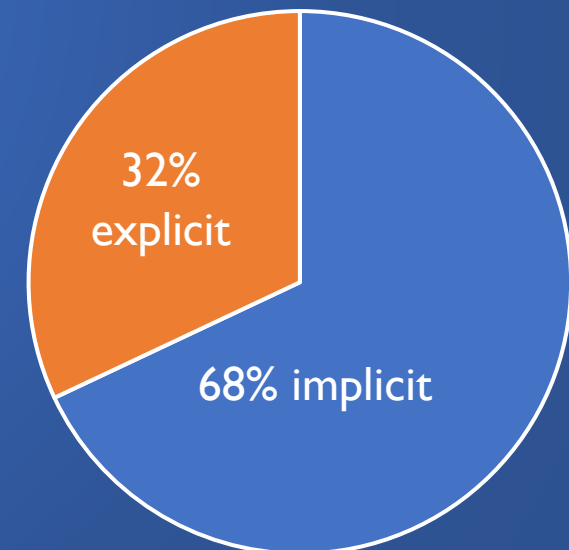
[putting a broken shin
bone back together]

Implicit instruction

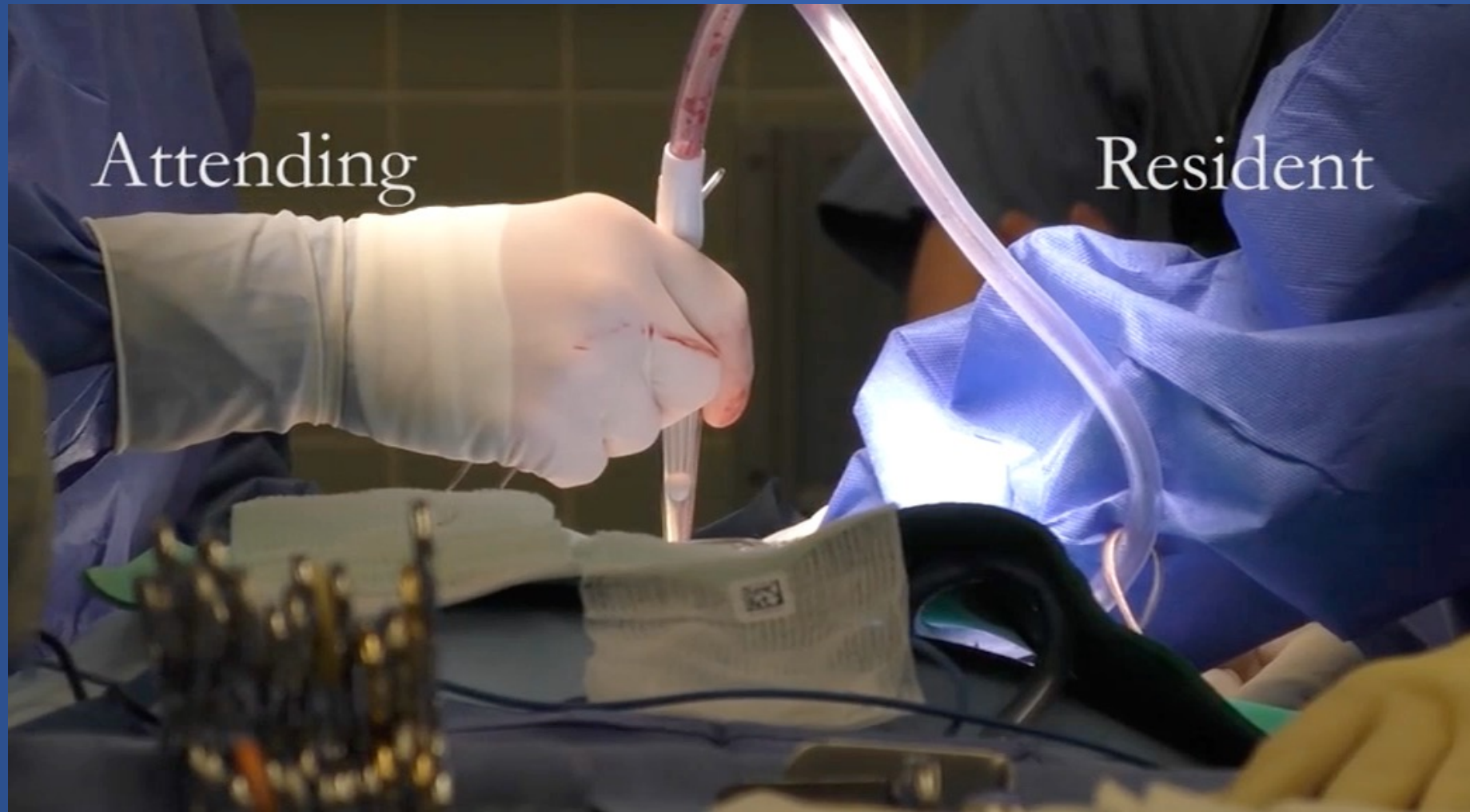


Instruction delivered by conversational implicature

How common is it?



Most implicit instruction is resolved right away

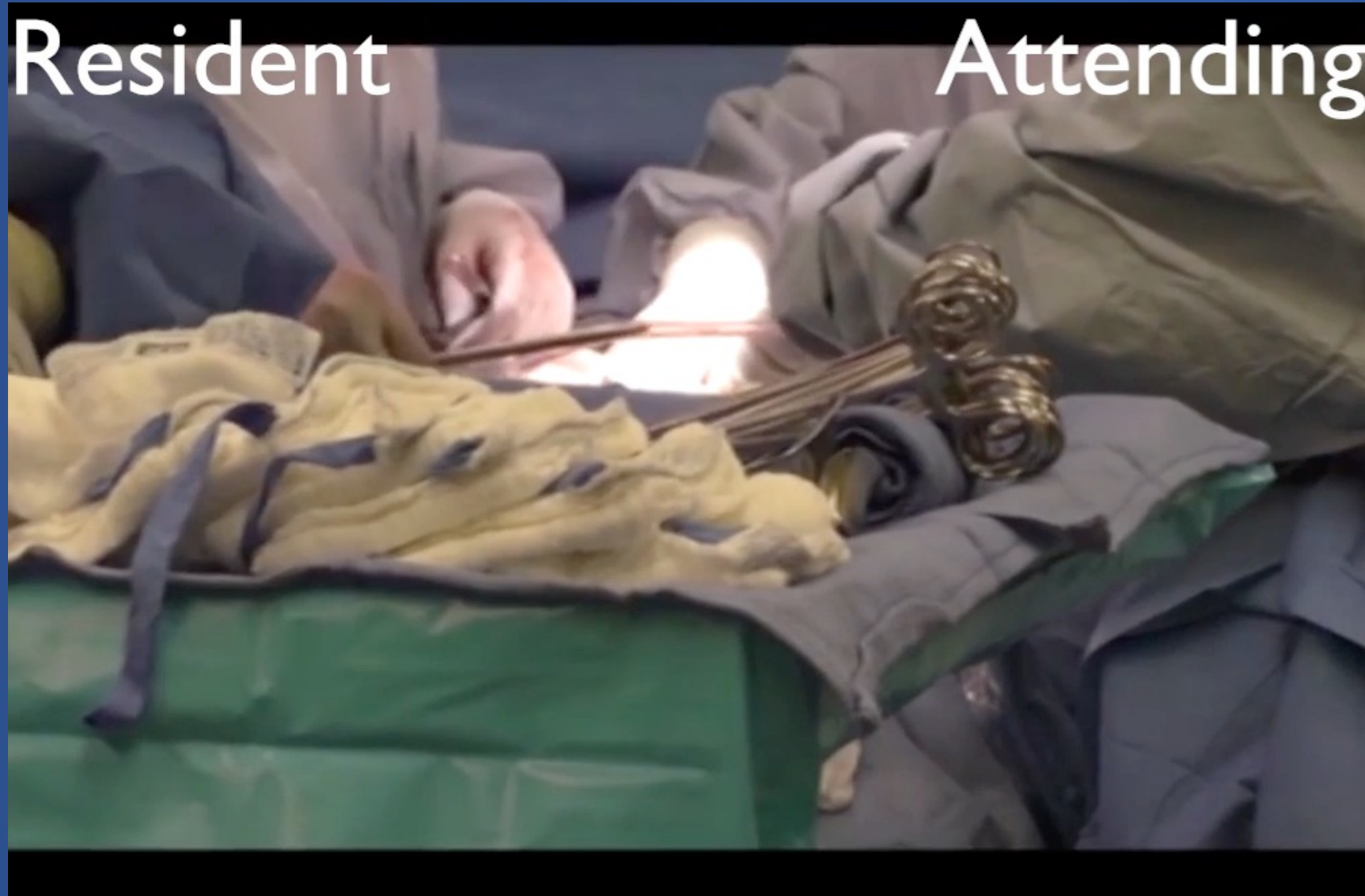


Case 454

Parathyroidectomy

[removal of the
parathyroid gland]

But resolution can be difficult



Case 827

Abdominal hysterectomy

[removing uterus through abdominal incision]

What did we observe?

Some actual ambiguities did occur

People are really skilled at avoiding + resolving them

Still: The effort adds risk

Recommendations

More direct instruction

More attention to clarity

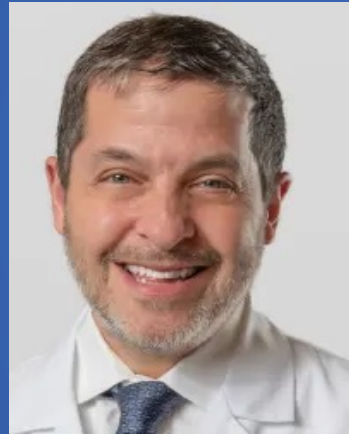
Build language habits that increase patient safety

Better links between linguists + professions

Thanks!



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Special thanks to the surgical teams who consented to our presence and questions, and to the patients (who all had successful outcomes)