



We performed usability testing on the intubation box that has gained popularity & recent [@NEJM](#) publication



Barrier Enclosure during Endotracheal Intubation | NEJM

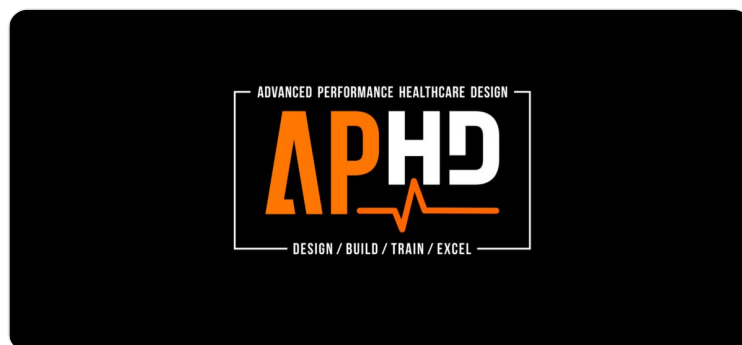
Correspondence from The New England Journal of Medicine — Barrier Enclosure during Endotracheal Intubation

<https://www.nejm.org/doi/full/10.1056/NEJMc2007589>

Thread with our findings (conducted by [@petrosoniak](#) & [@HumanFact0rz](#))

We used a modified pluralistic walkthrough technique [@NicholasChrimes](#)

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SUMMARY:

We identified multiple logistical and ergonomic issues associated with the use of the intubation box & based on this WE CANNOT RECOMMEND this device at this time within

an emergency department setting.

For more details, see below

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We didn't test ability of box to protect the team from contact/droplet and aerosol contamination. Unless there is evidence of nearly 100% exposure risk reduction to team, ergonomic impedances, logistical challenges far outweigh the infection control that might be provided

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We divided the testing into 3 stages:

1. pre-intubation
2. peri-intubation
3. post-intubation

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Pre-intubation

This device is large and requires a dedicated storage location

A cleaning process is needed to ensure consistently ready for use

5/

Requires dedicated individual to transport this to the patient bedside

A variety of our staff tested and were able to transport it to the bedside without assistance

Our taller staff could place on beds but our shorter staff, found it challenging requiring more help

6/

We tested multiple positions of the bed. The device remained in place from 0 to 30 degrees without issue. It seemed more stable at 30 degrees. 7/



Our beds aren't perfect rectangles allowing tubing to effectively pass under the box to the wall connections without kinking

8/



PERI-INTUBATION

We piloted w/ 3 intubators and optimal bed position

Short (5ft1in): visualization OK

Average (5ft7in): Problematic

Tall (6ft2in): Adequate

Glare from overhead lights is significant for tall operators & impacted visuals during initial steps of intubation

9/

We required an additional person to position the device in a timely manner. Without this, we had to contend with opportunity costs that other tasks would be delayed

10/

Bump test in multiple directions. Device exhibited head of bed instability falling into the intubator but lateral manipulation was stable. 11/



Each intubator was able to successfully intubate using both a Mac 3 & Hyperangulated blade (Glidescope).

There were delays noted in the intubation process of at least 30 seconds.

12/

Task specific challenges included:

- difficulty manipulating the bougie
- difficulty using a rigid stylet (usual stylet depicted here)
- difficulty with suction use (with Yankauer)

13/



Additional thoughts

Not feasible to have in place for a cricothyroidotomy

LMA was placed without difficulty

Must be set aside for CPR

14/



Post-intubation

In smaller room if placed on the ground, may occupy valuable room space esp if resuscitation continues

Moving to the floor/out of the room did not expose significant issues but required attention to patient circuits, a risk of disconnect can't be discounted
end



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