

**Docket #:** S18-523

# **Sensor-equipped laryngoscope and method for quantifying intubation performance**

This highly instrumented laryngoscope measures intubation mechanics such as force and torque to quantitatively track how a laryngoscope is being inserted. A light and camera at the tip of the scope allows real-time visualization, recording, and analysis of the procedure from inside of the airway. For endotracheal intubation, a clinician learns over time how to perform the procedure with minimal damage to the patient. This instrumented device can be used for benchmarking performance profiles of experts and subsequent training/live feedback for those with less experience.

**Figure**



**Figure description** - Sensor-integrated laryngoscope prototype

### **Stage of Development**

- Prototype built and tested

### **Applications**

- **Intubation guidance and analysis**, especially useful in neonatal units
- **Training and research**

### **Advantages**

- **Sensor integrated** laryngoscope, (sensors such as force/torque sensors, accelerometers, and gyroscopes)

- **Can visualize and record the airway** from within the patient measuring force, torque, and/or three-dimensional motion
- **Provides quantification** of intubation process for benchmarking best practices
- **Provides real-time feedback** during training

## Publications

- McWilliam, Paula, Louis P. Halamek, Brian King, Narra Martineau, Janene Fuerch, Nicole K. Yamada, Nancy Kent, Paige Kennedy, and John LaCourse. ["Sensor-Integrated Laryngoscope: A Key Step Toward Safe Neonatal Intubation."](#) *Journal of Clinical Engineering* 45, no. 1 (2020): 39-44.

## Patents

- Published Application: [20170105614](#)
- Issued: [10,264,958 \(USA\)](#)

## Innovators

- Louis Halamek
- Paula McWilliam
- Brian King
- Mark Granoff

## Licensing Contact

### David Mallin

Licensing Manager, Physical Sciences

[Email](#)