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Abstract

Summary of your project goes here. All body text should be formatted using Lucida Sans, 20 point, and justified.

There should be a one-line return between each paragraph. Do not use indentation at the start of the paragraph.

Introduction

Otolaryngology is a medical specialty focused on the ear, nose, and throat. In the field of otolaryngology, ENT specialists lack an efficient method to document ear examinations. Currently, otolaryngologists at the Miller School of Medicine use their personal cellular devices to record ear examinations and follow a cumbersome process to upload the images to the patient's medical records. Otolaryngologists would benefit from a quicker, more cost efficient, and professional method of documenting ear examinations and archiving the records to patients' medical records.

Otosopes are medical devices used by otolaryngologists to look inside of the ear and examine the condition of the ear canal and ear drum. The human ear is incredibly prone to infections which can affect the ability to hear even leading to hearing loss. Thus, maintaining the health of the ear canal and ear drum is vital. Otoscopes provide the means to conduct ear examination but developing a method to effectively document these ear examinations and archive them to a patient's medical records would improve the communication in clinics and their patients would receive more optimal care.

While digital otoscopes exist on the current market and have the capacity to document ear examinations, these products exceed the viable price point and/or do not provide computer connectivity, simple image accessibility, or easy image transferability. All healthcare professionals have a stake in the development of documenting and archiving ear examinations, as it would simplify a tedious process.

Design

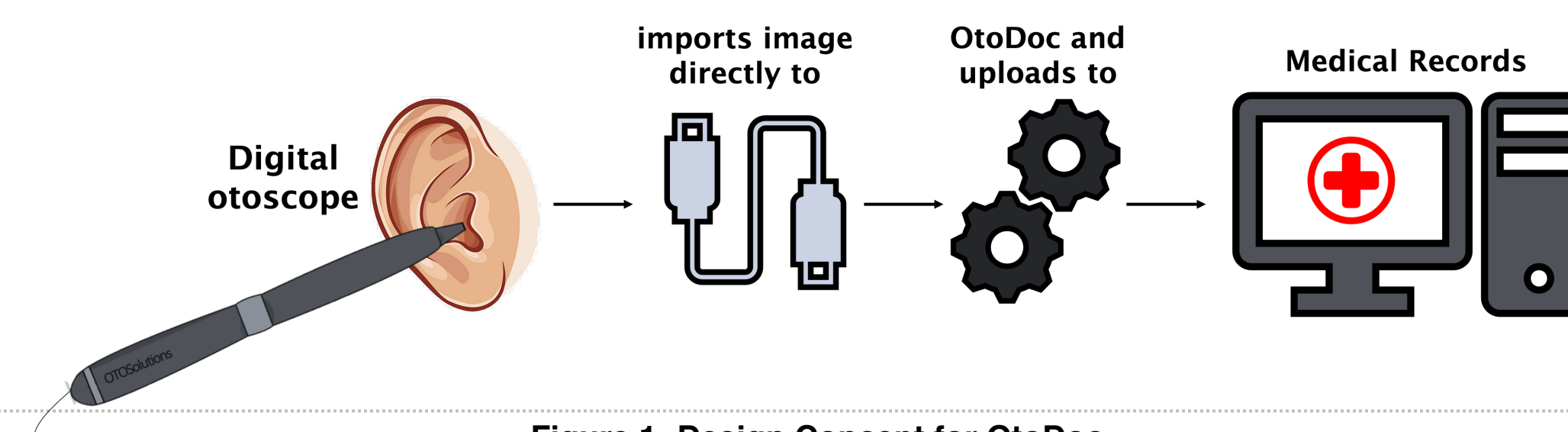


Figure 1: Design Concept for OtoDoc

The MoSCoW method is a common prioritization technique used during design development to manage the requirements to follow the design specifications for OtoDoc were defined. The method is outlined in the table below.

Table 1: MoSCoW Design Specifications for OtoDoc

MUST	SHOULD	COULD	WON'T
Capture image of the tympanic membrane Connect to computer Avoid cross contamination Generate a simple report including image, date, and document number	Image the stapes Have a handheld design	Autocorrect and enhance images Transfer image to patients' medical records	Have Bluetooth connectivity or transferability

Results

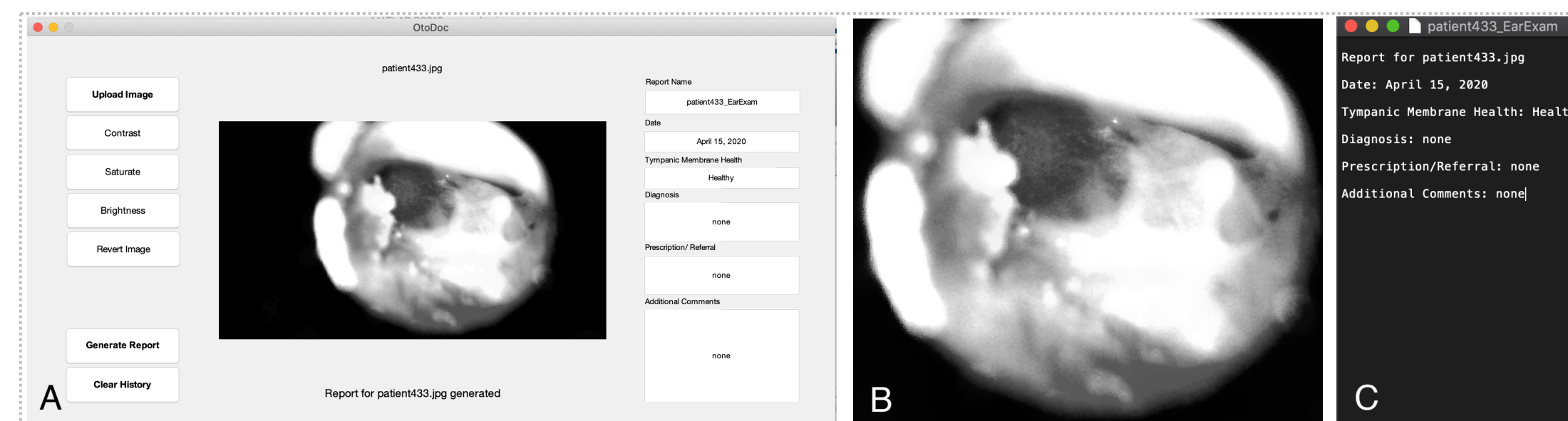


Figure 2: OtoDoc Prototype

A. OtoDoc Guided User Interface, B. Image saved when a report is generated, C. Report generated

Conclusion

In conjunction with the digital otoscope, the OtoDoc software imaged the tympanic membrane of the ear, allowed for autocorrection of the image, and generated a report to include vital information regarding the patient's ear health.

Due to the implications of the COVID-19 pandemic, the validation of the device's design still requires testing. A sample of otolaryngologists will be asked to assess OtoDoc's and the operator's ability to adequately document the ear examinations. The design will be improved upon feedback.

From here, the regulatory compliance strategy for the device must be developed and submitted.

Acknowledgments

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References

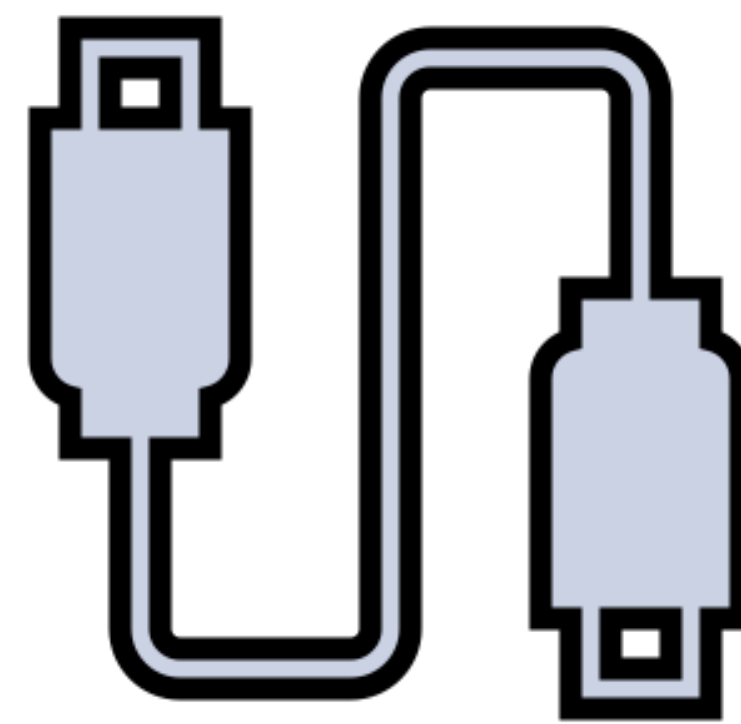
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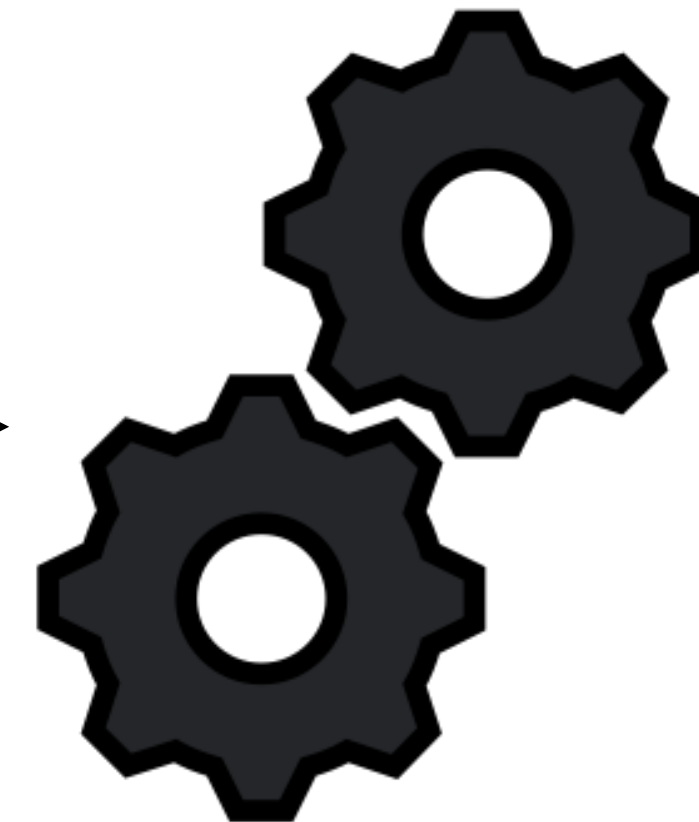
**Digital
otoscope**



**imports image
directly to**



**OtoDoc and
uploads to**



Medical Records

