



Twitter
[@soniaebenitezok](https://twitter.com/soniaebenitezok)

Automatic speech recognition system to record progress notes in a mobile EHR

Sonia Elizabeth Benitez , MD, MSc

Head of Research & Technology
Innovation, Department of Health Informatics

Hospital Italiano de Buenos Aires





Presentation Journey

1. Introduction
2. Methods
3. Results
4. Discussion & Conclusions



Hospital Italiano de Buenos Aires



- Academic hospital
- EHR & HIS **in-house developed** for more than 20 years
- Certified & accredited by several organizations





Introduction

Context

- Clinical progress notes
 - critical for clinical documentation & Continuity of Care
 - time consuming
- Low quality
 - omission of data
 - use of copy/paste in the Electronic Health Record (EHR)

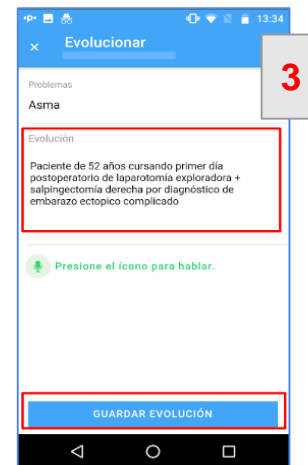
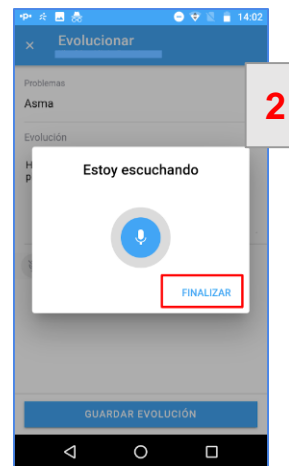
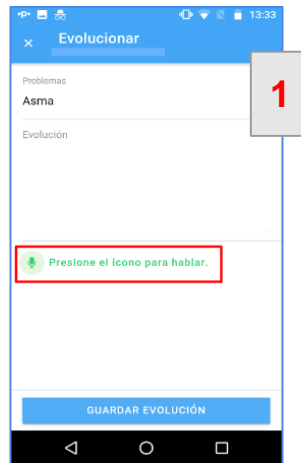
Objective

Evaluate the pilot and implementation of ASR technology to record progress notes in a mobile EHR application



Methods

The ASR functionality allows users to record progress notes of the patient from the mobile EHR progress module by recording a voice note.





Methods

Pilot phase



December 2020 and February 2021



- OB-GYN*
- Home Health Care
- Mobile operating system



acceptance usability

&



System usability scale (SUS)



March 2021

Implementation



- General Surgery
- Internal Medicine and others
- Mobile operating system



and

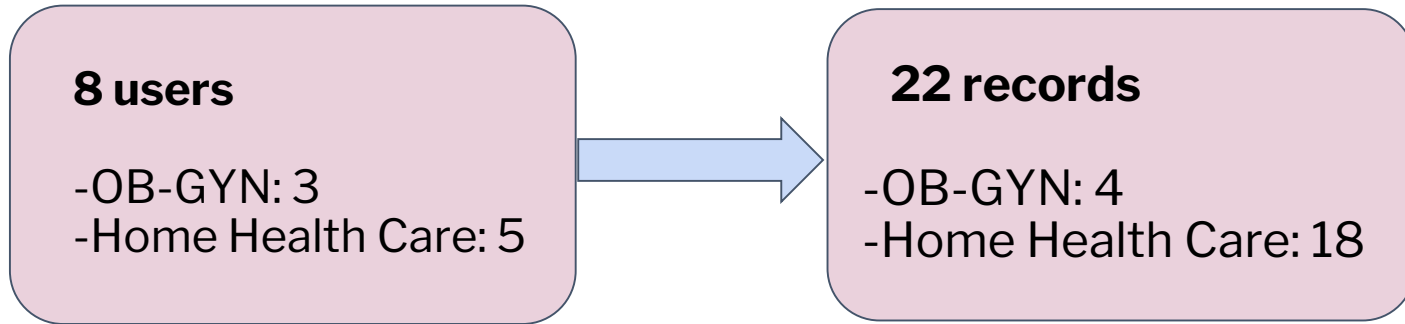
May

2022

Users logs and telephones interviews



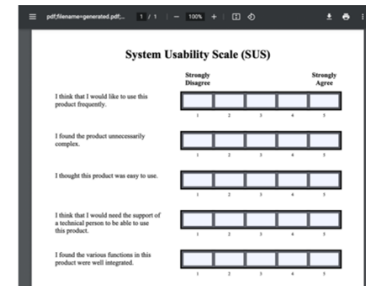
Results Pilot



SUS Results

all users perceived ASR in mobile EHR as:

- easy and not very complex to use
- agreed that other users could quickly learn to use





Results

Implementation

Number of progress notes performed with ASR and users involved.

Specialty	Records	Users
Home Health Care	148 (54.41%)	15
Internal Medicine	51 (18.8%)	10
Pediatrics	7 (2.57%)	2
Family Medicine	18 (6.61%)	7
Others	48 (17.64%)	21
Total	272 (100%)	55



Results: Interviews

6 physicians:

- 2 Internal Medicine
- 1 Family Medicine
- 1 Home Health Care
- 1 Pain Management
- 1 Neurology



Reasons for choosing to record progress notes with ASR tool

"Comfort", "Simplicity and speed", "Usefulness and simplicity because you don't have to type"

"It makes it easier to enter what I have trouble typing on my cell phone"

"It's useful for when you don't have a computer nearby".



Results



Perceptions regarding the functioning of ASR:

"75% of the time it works properly. 25% of the time it was slow, so I ended up writing. I didn't need to close the app, I could write it right there"

"It is usually slow and the words come out wrong"

"When I press the ASR button, the dictation tool does not open"

"Sometimes it hears words that are wrong but I fix them and that's it".



Discussion & Conclusion

- The users' perception of **saving time**
- Relevant when medical consultations are quick or performed at the patient's home and the **information** that needs to be dictated by ASR is **short and low complexity**.





Discussion & Conclusion

Lessons learned

- To evaluate the type of mobile devices
- To know the users characteristics
- To assess technological expertise and usage level of mobile devices, dictation experience, methods of recording in EHR and use of templates
- To train users how they should speak to achieve an accurate dictation.





Automatic speech recognition system
to record progress notes in a mobile
EHR

Thank you!
Any questions?

alejandro.gaiera@hiba.org.ar
investigacion.informatica@hiba.org.ar