



[@soniaebenitezok](#)

Integrating dermoscopic images into PACS using DICOM and Modality Worklist

Sonia E. Benitez, MD, MsC

Health Informatics Department
Hospital Italiano de Buenos Aires





Presentation Journey

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

MEDINFO23

8 - 12 JULY 2023 | SYDNEY, AUSTRALIA



Guillermo Martinez



María Agustina Ricci



Eliana Frutos



Carolina Vargas



Luciana Rubin



María Guillermina Ferraresso



María Victoria R. Kowalczyk



Alfredo Cancio



Daniel Luna



Carlos Otero



Paula Otero



Luis Mazzuocolo



Sonia Benítez



Introduction

Context

- Increase in the use of medical imaging
- Standardized acquisition, transfer and storage not guaranteed
- Digital dermoscopy images used in Dermatology managed manually (laborious, time consuming, prone to errors)

Objective

Develop and implement circuits and tools that allow **dermoscopy data** to be stored and accessed in an organized and secure manner **under the DICOM standard**



Methods



- Hospital Italiano de Buenos Aires, Argentina
 - is a community-based tertiary care hospital, HIMSS Level 7+ organization
- Dermatology Department
 - has a highly professionalised dermoscopy section, 3,200 skin lesions examination are performed per year



HOSPITAL ITALIANO
de Buenos Aires

Servicio de Dermatología



HOSPITAL ITALIANO
de Buenos Aires

*Departamento de Informática
en Salud*



Patient



*Schedule
appointment*

Technician



*Image
acquisition*



**Patient data is
entered manually**

Dermatologist

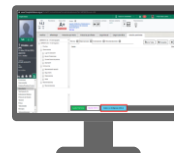


Video dermoscopy system

Image Analysis



**Images can only be
consulted from
video dermoscopy
system**

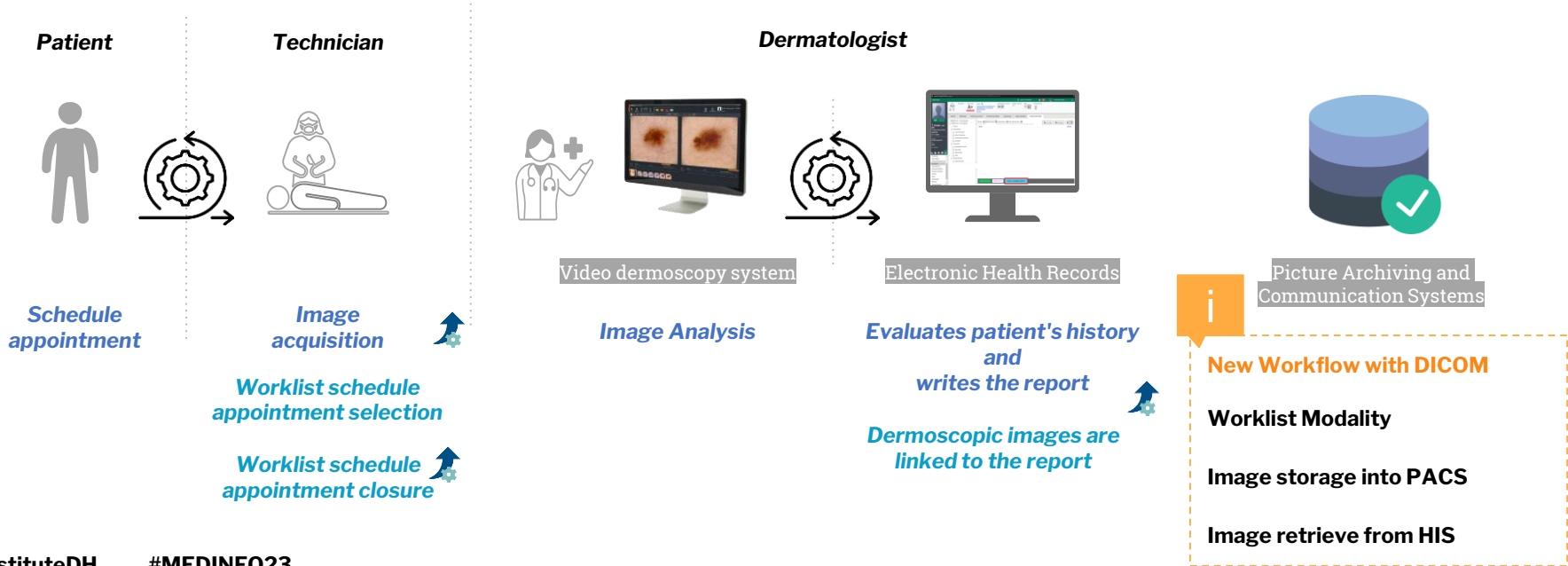


Electronic Health Records

*Evaluates patient's history
and
writes the report*

i

- 316 studies / month**
- 25 images / study (mean)**
- 158 images / study (max)**
- 4 studies with >100 images / week**





Results

PRELIMINARY PROJECT

DEVELOPMENT

DEPLOYMENT

Data Collection and Analysis

Feasibility Analysis

Architecture Design

Development and Testing

Database Analysis and Correction

Contingency Plan

User Training

Pilot Test

DICOM + Worklist

EHR-PACS Interface (DICOM messages)
EHR-PACS-Dermoscopy Software

Creation of help desk circuit

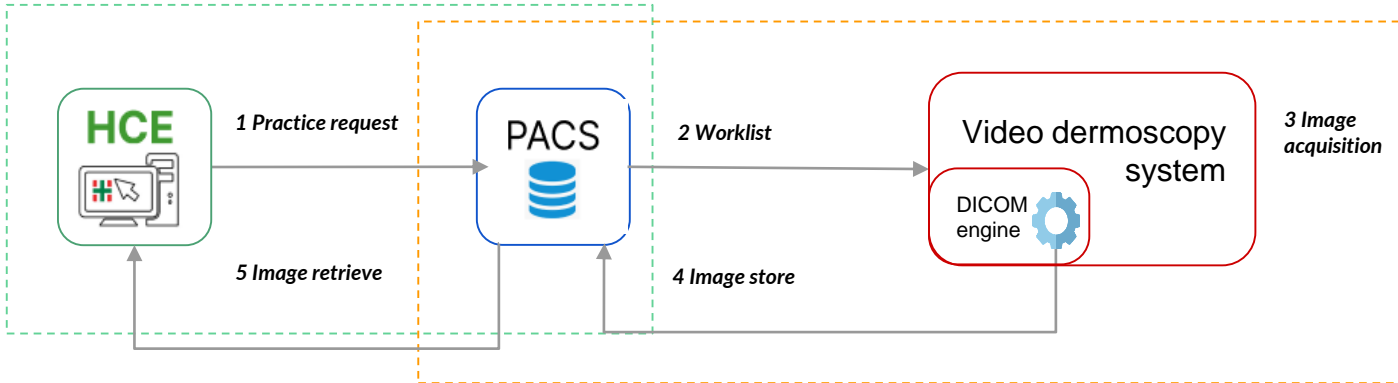
Four weeks monitoring

2 non-integrated video dermatoscopes (local storage)
Manual patient entry

1. Worklist item creation
2. Image acquisition and PACS storage
1. Image retrieval and visualization

Correction of duplicated patients and mismatched id and patient data

Training sessions, guides and instructions





Discussion & Conclusion

- Despite the increasing use of digital skin imaging, the acquisition, transfer, and secure storage of these data remain challenging for dermatologists and healthcare institutions
- DICOM standard in dermatology is still under development, a transformation is being driven by new technologies, such as Artificial Intelligence, which will encourage the use of the DICOM in dermatology



What comes next?

- Analysis of the pilot test results analysis
- Research study before and after solution implementation
- Replicate the biomedical equipment integration process in other hospital departments and medical practices



¿Any questions? ¡Thank you!



servicio.dermatologia@hospitalitaliano.org.ar



[dermatologia.hospitalitaliano](https://www.instagram.com/dermatologia.hospitalitaliano)



pIAS HIBA

inteligencia.artificial@hospitalitaliano.org.ar



[informaticahiba](https://www.instagram.com/informaticahiba)