



Lessons Learned from the First Clinical Informatics and AI Conference for Medical Students in North Africa and Morocco

A Collaboration between

The University of Illinois at Chicago & The University of Mohamed Premier in Oujda, Morocco.





Panel:



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Building bridges & international collaboration between Chicago, IL USA and Oujda, Morocco.

- The current state of health informatics and healthcare in general, in Morocco.
- Description of the need of health informatics and healthcare innovation in MENA and Africa.
- The story behind the collaboration?



The current state of health informatics and healthcare in general, in Morocco.

- The Kingdom of Morocco is a North African country, an ex-French colony, with a population of around 35 million.
- The Moroccan government has created a roadmap for a digital transformation plan to integrate IT into the economy's sector, and health informatics is part of this roadmap.
- There are two types of hospital systems in Morocco, *private and public*. The public system is more affordable, caters to the public, and accounts for 85% of hospital beds.
- Most public hospitals are housed within University Medical Centers and are known in French as “Centre Hospitalier Universitaire” or CHU, under the Ministry of Health.
- Each CHU is tied to a medical school and University. Currently, Morocco has five operational CHUs (Fig. 1).





The current state of health informatics and healthcare in general, in Morocco.

- CHUs are leading the digital transformation plan.
- They have already implemented an Electronic Health Record (EHR) system but remain in silos.
 - With insufficient infrastructure.
 - Lack of health informatics experts.
 - No digital curriculums.
- A recent local qualitative study recommended the need for **local university leaders (Champions)** to enhance the move towards digitization through curriculums, education, and research.





The story behind the collaboration?

- Overall vision of the government for healthcare and education reform in Morocco to further incorporate English into the national educational system and healthcare.
- The vision of The UMP's president (Prof. Yassine Zarhloule) at Ujda to partnership with US universities and institutions to benefit from the knowledge transfer and student and faculty development opportunities.
- UIC supports the internationalization of the university. The Office of Global Engagement (OGE) at UIC works closely with faculty and staff to evaluate opportunities for collaboration and then proceed with formalizing partnerships and activities to be undertaken with partners.



Health Informatics awareness and education via workshops.

- Organized the first Clinical Informatics Conference for Medical students in North Africa.
 - Covered main topics of health informatics.
- The challenges and opportunities to kick off such initiative in Morocco.
- The students and faculty feedback.



Here are the topics covered during the workshop:

- Introduction to health informatics, Grand Challenge, specializations & educational pathways.
- Introduction to Health Data Science.
- Introduction to Outpatient Informatics and Inpatient Informatics.
- Introduction to Public Health Informatics & Health Information management.
- Entrepreneurship & Health IT.
- The value of health data librarian in the success of health informatics projects.
- UIC Innovation center, the success, and opportunities.
- Socio-technical system perspectives in Health informatics.
- Artificial Intelligence Applications in Pathology & medical education.
- Ethics in Health informatics.
- Clinical Decision Support.
- AI in Healthcare deployment in Africa.
- Innovation: Student-Faculty Model & Collaborative practice.
- Interoperability and healthcare standards like HL7 and FHIR.
- BiaAffect: Using cellphone keyboard to detect mental health problems.
- Biomedical Visualization: The challenges in visualizing health data.
- Human factors & consumers in health informatics.



The challenges and opportunities

- Language barriers
- Cultural differences
- Time zone difference & tele-conferencing.

- Cultural richness & diversity.
- Creative local talents thirsty for innovation in Health IT.
- Early innovators opportunity.

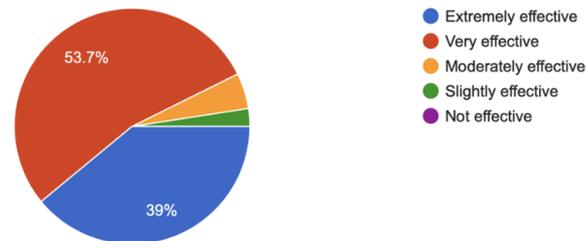


Students' engagement

- We created breakout sessions, over two days, to discuss about local systems problems (opportunities), and brainstorm solutions.
- Launched a survey for their feedback:

Please indicate the effectiveness of this session.

41 responses





Students' Feedback: The questions we asked them.

1. What things did you like or find useful about this session?
2. Do you have specific suggestions as to how this session might be improved?
3. Are there any topics you would like to see added for future workshops?



Some of the Students' Feedback

#1	#2	#3
<input type="checkbox"/> Discovering an emerging revolutionary field, cultural exchange, problem-solving opportunities	<input type="checkbox"/> More in-person presentations.	<input type="checkbox"/> How to get in the informatics research field
<input type="checkbox"/> I liked that it was interactive. And it tackled new subjects and concepts we weren't familiar with as medical students.	<input type="checkbox"/> More practical, local examples of informatics solutions.	<input type="checkbox"/> Informatics and mental health
<input type="checkbox"/> Everything was very interesting & inspiring!	<input type="checkbox"/> More interactive breakout sessions.	<input type="checkbox"/> Data management.
<input type="checkbox"/> The interactivity of the session	<input type="checkbox"/> Hands-on training and skills improvement, like QI methodology, bootcamps..etc	<input type="checkbox"/> the topic of entrepreneurship in the medical field
<input type="checkbox"/> Diversity and interactivity		<input type="checkbox"/> Comparison between Moroccan and American health systems and the problems we face as physicians and healthcare workers

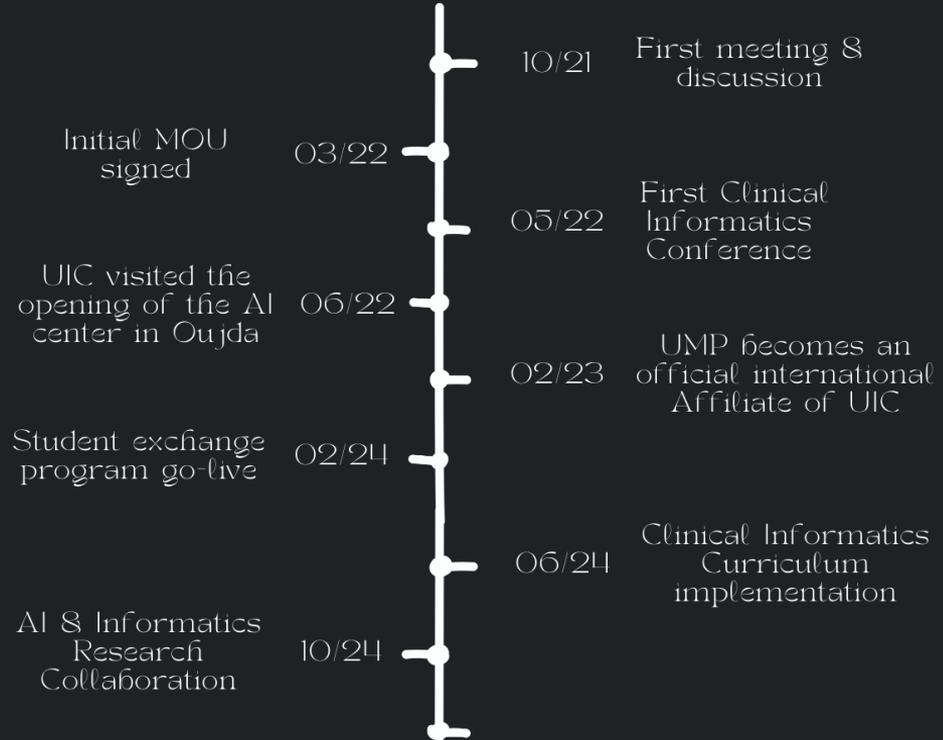


Expand the international partnership & create a roadmap to enhance the digital transformation of healthcare in Morocco.

- What is the vision and roadmap in place for this partnership for the next 5 years.
- What are the lessons learned from this partnership in terms of workforce building and development?
- How to replicate this model in other parts of Africa and the MENA Region.



Roadmap:





What are the takeaways?

- Building an international collaboration in health informatics is challenging and requires local champions to lead the efforts.
- The main elements of success in these collaborations:
 - Leadership support in both organizations.
 - The right strategy and vision to make it successful.
 - Consistency and persistence.
- Africa in general, and Morocco in particular have impressive local talents thirsty for innovation in Health IT.
- Mutual incentives are key for long-lasting partnership.



Q&A