

2014

EXCHANGE PROGRAM REPORT



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Ospedale Maggiore

Bologna, Italy

"A constant element of enjoyment must be mingled with our studies, so that we think of learning as a game rather than a form of drudgery, for no activity can be continued for long if it does not to some extent afford pleasure to the participant."

Desiderius Erasmus

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1. Introduction

As I reach the final stage of my residency in Internal Medicine, all the things that I have been experiencing and learning must come together. This way I will be the best possible doctor to my patients and colleagues. Nonetheless, a doctor is also a person, and they must always travel together in this great journey that all of us undergo.

Medicine has come a long way since the beginning of times. Mainly due to the curious and insightful mind of many. The European Federation of Internal Medicine alongside with the National Societies of Internal Medicine of each European country has developed many opportunities for the young doctors to keep an active role and inquiring mind. One of these projects is the Exchange Program.

I decided to apply to this program because it is the perfect setting to expand my horizons in our money driven society. Not only we need to be good doctors but we have to do so in the most cost/effective way.

In this line of thinking I tried to combine world expertise with a country that I thought similar to Portugal regarding its population habits and ways of working. Italy seemed like the obvious choice. Internal Medicine is a recognized medical specialty, with the same amount of training years, in a country where the diseases and style of life is quite similar to Portugal. Regarding the Hospital what better department than Professor Vincenzo Arienti's Medicina A and Centre for Internistic, Vascular and Interventional Ultrasound.

At the end of this month I hope I can say I have learned about the organization of Italy's health system and can take home precious key points that will make me more competent in my everyday life as well as aiding to make my workplace a reference for other Internal Medicine departments in my Country.

2. Ospedale Maggiore

Ospedale Maggiore is a 3rd level general hospital, the principal of the 9 hospitals of the *Azienda Unitá Sanitaria Locale (AUSL) di Bologna* of the *Servizio Sanitario Regionale Emilia-Romagna*. AUSL Bologna is one of the largest Health Unities in Italy both in size and complexity of care and it takes care of a population of above 850.000 inhabitants in 50 municipalities of the province of Bologna, the capital city of the Emilia Romagna. This is the first difference from Portuguese Health System organization, where we have also 3 different hospital levels, according to the services that they provide, but they don't function together, but as separated and independent Units. Maggiore, with a total number of 625 beds has similar properties to the Hospital de Braga (my workplace), which has 704 beds.

Ospedale Maggiore incorporates the following Departments: Emergency (with Trauma Center and a dedicated ICU), Internal Medicine (with Cardiology and ICU, Internal Medicine, Dermatology, Geriatrics, Endocrinology, Angiology, Pneumology and Rehabilitation Units), Oncology (with Breast Surgery, Thoracic Surgery, Thoracic endoscopy, Psychology, Radiotherapy and Pathological Anatomy Units), Surgery (with General Surgery, ENT surgery, Ophthalmology, Orthopedics, Obstetrics-gynecology; Urology, Vascular, and Maxillo-Facial Units), Pediatrics; Hygiene and Organization Services and Neurology (which belongs to the *Istituto delle Scienze Neurologiche - IRCSS* located in the Ospedale Bellaria di Bologna) with Neurosurgery and Stroke unit.

As Ospedale Maggiore is not a university hospital, the Internal Medicine physicians are all consultants. This is a major difference point that has a high impact on the training of new specialty doctors. In Italy, a specialty registrar is considered a student on job training and he is paid by the University and not by the National Health System. This way they have their time distributed in clinical work, study and research hours, so they can reach excellence in all these three fields. From my point of view this is a highly productive and teaching focused strategy, but also confines registrars to only one kind of learning/working environment, thus reducing their variety of experiences.

My fellowship, from the 8th of September until the 7th of October, was divided accordingly to the following schedule:

08/09 – 21/09	22/09 – 7/10
Medicina A	
Centre for Internistic, Vascular and Interventional Ultrasound (US)	

Ospedale Maggiore has 13 floors and the Internal Medicine department has a dedicated area of nearly 180 beds, distributed in 5 units of 36 beds each. Of which, one is for patients requiring higher intensity of care (“RED area” at the 11th floor) and four for patients in intermediate intensity of care (“BLUE” areas at the 6th, 7th, 9th and 12th floor). Whenever a patient is admitted from the Emergency Department to a specific unit following an automated system named “Cruscotto” (which has been designed to ensure equitable distribution by number, time, sex, and type of patient), the emergency physician gives a score to the patient based upon the ViEW score (VitalPAC Early Warning score):

⊕ NB: Lo stato di coscienza (AVPU) va rilevato ma non calcolato nel punteggio totale

VIEWES	3	2	1	0	1	2	3	SCORE
Coscienza (AVPU)				In Contatto (A)			Risponde a voce (V) Dolore (P) Non responsivo(U)	X
PAS (mmHg)	≤90	91-100	101-110	111-249	≥250			
Polso (bpm)		≤40	41-50	51-90	91-110	111-130	≥131	
Freq. Respiratoria (fr)	≤8		9-11	11-20		21-24	≥25	
Temp. Corporea (°C)	≤35		35.1-36	36.1-38		38.1-39	≥39.1	
Saturazione Periferica O ₂ SpO ₂	≤91	92-93	94-95	≥96				
F _I O ₂				21 (aria)			≥22	
							TOTALE	

Respiro	Responsività	Sanguinamento
6 NIMV (ventilazione meccanica NON invasiva)	6 Stato di incoscienza di recente insorgenza Stato confusionale acuto con agitazione psicomotoria	6 Presente
5 Reservoir Broncoaspirazioni ripetute	5 Stato confusionale acuto	
3 Necessita di O ₂	3 Disorientato ma collaborante Non responsivo per patologie pregresse a/o croniche	0 Assente
0 Non necessita O ₂	0 Orientato	

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Fig. 1 – Ospedale Maggiore’s ViEW score.

According to recent literature that validates this score (1, 2), patients are referred to the appropriate area and unit in the department regarding their risk score:

- 0-3, Blue area
- ≥4-6, Red area
- 7-10, Intermediate Care Unit
- >10, Intensive Care Unit

My exchange period in Internal Medicine was in the Unit lead by to Professor Arienti’s at the 6th floor – Medicina A, Blue area. This definitely makes a world of change both for the patients and for the referring physician. In my hospital patients are admitted directly from the emergency room following the evaluation and approval by one of the consultants of the Internal Medicine Department. This means that they have to go down into the ED to admit the patient, without any specific room or aiding nurse to assure the privacy and proper environment to perform the most relevant procedures for the internist: the clinical history and the physical examination. As opposed, in Ospedale Maggiore, patients are admitted to the specific unit according to

their ViEW score and when they arrive in the unit they are welcomed and evaluated by a team composed by one nurse and one of the consultants in a dedicated room. They collect together the clinical history, perform the nurse and clinical examination (in this room there is even an ultrasound machine that very much helps the admitting doctor in hypothesizing/confirming/excluding the admitting diagnosis at bedside) and at the end of their work they lay down the plan of action for the predictable stay of the patient in the unit. In my view this approach really represents a cutting edge performance in internal medicine.



Fig. 2 – Medicina A admittance room with US machine.

2.1 Medicina A

This ward comprises 36 beds and it is divided in 3 sectors: BLU 1; BLU 2; BLU 3. Each of which has 12 beds and an appointed consultant. In the two weeks I was there I was a part of the BLU 2 team with Dr. Elmi and Dr. DeToma, who really made my stay a pleasure, helping and explaining all the details to me.

During this time I could practice medicine in a different country and with a very different organizational system than mine. Every morning we started with a 10-15

minutes briefing with the responsible nurse who handed over all the important information regarding the patients for each sector. This meeting is very important and it really makes a difference for the combined nurse and clinical work, not only because it tightens the work relationships between doctors and nurses, but also because it has an effective impact on improving the result of the treatment and on reducing the inpatient stay in the Hospital.

Moreover, since last June 2014, Dr. Arienti's Internal Medicine Unit has been chosen as the first unit in the Hospital to test the implementation of the electronic chart (CCE) for the patient, both from the physician's and nurse's side. Therefore I had the opportunity to examine day by day the pro and cons of this new system. Each consultant has its one portable touch PC alongside with a tablet for the nurses. We went bed to bed and made all the necessary registries and consults of all the information regarding clinical history, vital signs, lab and image tests, consulting requests, drugs prescriptions and preparing the clinical report for the discharge of the patient at bedside. This was definitely a plus factor for the wellbeing of the patient and doctor. Of course as all pilot experiences has its pitfalls, especially concerning the hardware (reduction of length of input of clinical records with PCs, e.g. using pen writing or word recognition software) and the software that has to be more user-friendly (simplification of the too complex platform for prescribing drugs or lab tests), but I am sure that with necessary time for testing and improving they are going to be resolved and this will be the future for the best patient's care (3).



Fig. 3 – Medicina A new Wi-Fi clinical recording system.

Interestingly enough, in my Hospital, specifically in one ward of my department we also just started a pilot trial on how to reduce non productive and time consuming tasks during the clinical visit and the total admittance days of each patient. One of the proposed strategies was exactly this one (pocket PC and touchpad for doctors and nurses). As I am part of this pilot project team, this was a bonus during my stay and I have gained a lot on being part of this experience.

Regarding the clinical aspects the one thing that clearly made a difference was the ultrasound competences of this team of Internists, either at bedside in the ward (focused assessment with sonography) or by request to the US Centre (normally executed on the same day (emergent request: by contact with the requesting physician; urgent request: 24 hrs; normal request: 48 hrs). As we can find in very recent published data (4-6), it does not only allow a faster diagnostic and therapeutic path but also contributes to reducing the length of stay of patients (7, 8), thus benefiting the patient (9), doctor and hospital. In my view and in the view of a necessary economist society this is a fundamental and central stone that should be part of the list of competences of Internists around the world.

2.2 Centre for Internistic, Vascular and Interventional Ultrasound

The two weeks that I spent in this highly focused and full of expertise centre were the “cherry on top of the cake”. As in my hospital all the ultrasound exams are performed by the Radiology department we do not have an US machine available. This way we have to wait for the exam to be scheduled, which sometimes takes as long as two weeks, or if we need to do a procedure, like thoracentesis or paracentesis we do it “blindly”, thus augmenting the probability of side effects and risks, even of death (8).

This Center is composed by five different rooms where the ultrasounds are performed – Internistic, Vascular and Interventional. Each room is provided with a recent Ultrasound machine with different probes (linear, convex, sector...) thus allowing for the same consultant to focus on different aspects of the US procedures needed by the patient. Instead of just performing the requested exam with the short provided information, they always take the clinical file and previous exams into account as well as the patient complaints thus completing the clinical history. The exam is then done not only focusing in the problem that brought the patient to their attention but fitting all the relevant alterations seen in the clinical picture provided (e.g. clinical ultrasound). This really is Internistic Ultrasound focused in the patient and not the disease. This way they are able to make differential diagnosis, confirm or

exclude them and to suggest a possible treatment or, at least, give an opinion on the course of action.

Among the most exciting images that I was able to see are those of the pancreas and gastrointestinal tract.



Fig. 4, 5 – US image of pancreas and probable colonic cancer.

One of the recent US techniques that I could witness was Contrast-Enhanced Ultrasound (CEUS). This is a very advanced but simple and fast and US technique that, without any major risks for the patient, allows the doctor to better identify and characterize some of the lesions found on the hepatic (10), splenic, pancreatic, renal and adrenal parenchyma.



Fig. 6 – CEUS.

Another amazing ability of these professionals is allowing cytological and histological diagnosis (11), but also therapeutic procedures (drainages, catheters insertion, tumors ablation by alcohol injection or radiofrequency delivery) by performing ultrasound-guided mini-invasive with the maximum safety.



Fig. 7, 8 – Fine needle percutaneous aspiration of parotid gland lesion; US-guided thoracentesis.

Not only the in and outpatients come to the Centre, but the Centre also goes to the patients. Whenever a bedside US is requested from any department, they have the necessary tools to provide an accurate diagnosis with a high level of certainty in the patient's room. I witnessed as my tutor, Dr. Stefano Pretolani, made the diagnosis of an acute cholecystitis in a critical admitted patient with abdominal pain and distention that had developed icterus, excluding ascites.



Fig. 9 – Vscan – portable US machine.

During my stay I was lucky to be accompanied by people that always had my best interested in mind and so I was allowed to perform supervised ultrasound exams. This really made mine Internistic US seed grow even more. It is a precious tool in the hands of an Internist (12).



Fig. 10 – Me performing a supervised abdominal US.

3. Other experiences

3.1 Participations

Expert-oriented consult with Prof. Arienti at Ospedale di Stato della Repubblica di San Marino, 8th September and 6th October.

Bologna Stroke – Grandangolo, Policlinico S.Orsola-Malpighi, 19th September.

Seminario “Ipertensione arteriose resistente: nuove prospettive terapeutiche: la denervazione renale, a che punto siamo?”, Ospedale Maggiore, 1st October.

3.2 Bologna

Bologna is the largest city of the Emilia-Romagna Region in Italy. It is the seventh most populous city in Italy, located in the heart of a metropolitan area of about one million. It is famous for its Tortellini, Tagliatelle and Towers. The University of Bologna, founded in 1088, is the second oldest existing university in the world and it

brings a student's atmosphere to the city. Apart from being a very beautiful city, with centuries of history in its *Vie*, it has the most nice people and weather so I could get to know some of its secrets.



Fig. 11 – Bologna, view from the *Asinelli* Tower.



Fig. 12 – Archiginnasio, *Teatro Anatomico*.



Fig. 13 – *Portico* in Bologna.

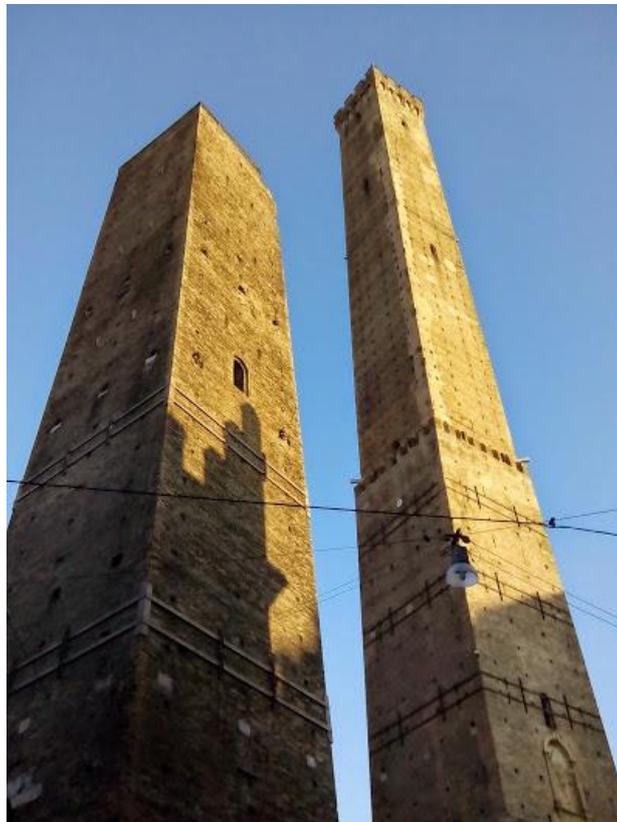


Fig. 14 – *Garisenda* and *Asinelli* towers.



Fig. 15 – Sanctuary of *The Madonna di San Luca*.

"The one who only knows of Medicine not even of Medicine knows."

Abel Salazar

Ana Lages

4. Conclusion

After this month in Bologna I am certainly a richer person. Despite being here only for 30 days, it feels like many more. I felt right at home since the first minute.

I saw, learned and was pointed out on some very important aspects of the organization of a Hospital and the necessary tasks to undergo a successful path as a competent and human doctor.

Professor Vincenzo Arienti was the perfect host and Dr. Stefano Pretolani the perfect tutor, allowing me to discover things by myself but always “keeping a hand on the steering wheel”.

The main key points that I could observe and that really make a difference are:

- Well coordinated staff (either medical and non medical), working towards the same goals and together as a team;
- Patient scoring system according to level of illness severity and adequate placement in specialized units;
- Medical staff with competences in US and US-guided techniques (13);
- Clinical driven research that allows continuous training and learning (14).

I am very thankful for having had this fantastic experience and for getting to know some amazing people and this incredible city that is Bologna.

I leave Italy happy and already with *saudades*.



Fig. 16, 17, 18, 19 – Prof. Arienti’s Medicina A and Centre for Internistic, Vascular and Interventional Ultrasound Team.

5. Acknowledgements

To Professor Vincenzo Arienti's availability, thoughtfulness and knowledge.

To Dr. Stefano Pretolani's kindness and patience on teaching me the little tips and tricks of US (and the Bolognese cuisine).

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To all the other doctors, nurses and healthcare assistants of Medicina A and Centre of US's gentleness (thank you for the daily real Italian coffee!).

To all patient's patience.

To EFIM's Exchange Program committee for making these kind of experiences possible.

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