

Title: Experience of a Medical Intern in a Secondary Healthcare Hospital in Mexico

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Authors Contribution Statement:

Contributor Role	Role Definition	Authors					
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Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	X					
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.	X					
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.	X					
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.	X					
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.	X					
Methodology	Development or design of methodology; creation of models	X					
Project Administration	Management and coordination responsibility for the research activity planning and execution.	X					
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.	X					
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.	X					
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.	X					
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.	X					
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.	X					
Writing – Original Draft Preparation	Creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	X					

Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.	X
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Discussion Points:

1. What happens when you have to do this clinical year in a small hospital or secondary healthcare hospital?
2. Is medical education better in a tertiary healthcare hospital?
3. In a secondary healthcare hospital, do you only see common diseases?
4. Is research possible in a secondary healthcare hospital?
5. Is a rural hospital a bad place to learn?

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1 **ABSTRACT.**

2

3 In Mexico, medical training is characterized by 4 or 5 years of studies at a university campus, one year of
4 undergraduate internship and one year of social service. The undergraduate internship is the theoretical-
5 practical academic cycle that takes place in the clinical fields and is part of the curriculum of the medical career.
6 Normally we expect to be able to choose a hospital with subspecialties or with prestige in our region. But no
7 matter the type of hospital, the important thing is our attitude to work and learn.

8

9 **Key Words:** Internship and Residency; Medical student; Personal Narrative [Publication Type]

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1 THE EXPERIENCE.

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3 In Mexico, medical training is characterized by 4 or 5 years of studies at a university campus, one year of
4 undergraduate internship and one year of social service. The undergraduate internship is the theoretical-
5 practical academic cycle that takes place in clinical fields and is part of the medical degree curriculum. The
6 undergraduate medical intern or medical intern is a student enrolled in an institution of higher education, who
7 meets the academic, administrative and legal requirements to perform the undergraduate internship.¹

8
9 Medical interns are medical students who perform a rotating internship for one year after their university training.
10 They are essential when attending patients in hospitals and clinics, thus avoiding the collapse of the national
11 health system in Mexico. Everyone strives for the possibility of choosing a "good" site, however there are
12 multiple external variables that influence the outcome, such as the number of students graduating per year, the
13 number of universities, the number of hospitals available and the historical context being experienced (e.g., the
14 COVID-19 pandemic).

15
16 There is no consensus on the criteria for a good medical internship site, however, the current literature describes
17 that most medical interns choose the sites closest to their home because the costs and transportation time
18 increase with foreign sites.²⁻⁵ The reality is that we are pressured by teachers, doctors, peers or family members
19 with the trite idea that a good internship site equals a better undergraduate internship. And by not getting any
20 of those honorable or recognized institutions, there is a sense of defeat in those who have to choose sites far
21 from home, less recognized institutions or with fewer patients.

22
23 What happens when you have to do this clinical year in a small hospital or secondary healthcare hospital? I
24 chose the Hospital General de Pabellón de Arteaga, a second-level care hospital in Mexico. It only has
25 emergency services, psychology, nutrition, epidemiology, internal medicine, general surgery, gynecology,
26 pediatrics, radiology, traumatology, neonatal intensive care and reproductive health.⁶ The hospital has
27 approximately 40 beds between all the services offered. We are 9 medical interns, with a schedule from 7:00
28 am to 3:00 pm, in which we have 2 months rotating cycle through the main services of the hospital. However,
29 after 3:00 pm a team of 3 people is in charge of supporting the hospital during the afternoon and night shift.
30 Every third day 3 people have a 32 hours shift. The team of interns is shown in **Figure 1**. Many of the medical
31 interns in Mexico dream of seeing and participating in third level procedures, sub-specialist led surgeries or
32 having different medical specialties in their hospital. In a secondary healthcare hospital, procedures are limited
33 to the resources and specialties that are available on the unit.

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35 In a secondary healthcare hospital, procedures are limited to the resources and specialties that are available
36 on the unit. A small hospital or one with few subspecialties mean that it's a bad place for this important year in
37 our training in Mexico. In the case of having few inpatients, we have the opportunity to deepen our knowledge
38 and skills with feedback from the physician and resident physicians. On the contrary, in many small hospitals or
39 in rural areas, the number of patients exceeds the hospitals' capacity hence, allows the intern to find constant
40 moments of learning and practice. In my hospital, the obstetrics and gynecology service has the highest number
41 of patients seeking care for an obstetric event in the evenings. It is common to spend a full night in cesarean

1 sections, conducting labor and delivery. This shows that any hospital is a good place for undergraduate medical
2 internships, regardless of the number of patients or type of specialties they have.

3
4 Is medical training in a tertiary hospital better? Overcoming the expectation of being in a larger hospital was
5 difficult and a reality check that I needed. I found it a great opportunity for in-depth study of a smaller number of
6 patients. It was important to have time to critically read scientific articles and the space for medical training with
7 specialists and resident physicians.

8
9 Another virtue of being in a small hospital and perhaps peculiar in my case is the type of clinical rotation in the
10 hospital services. In most hospitals in Mexico, intern teams rotate for 2 months in the main services offered by
11 their hospital. During this time, they must concentrate on their service.

12
13 The case of my hospital is different; the number of interns per generation is 5 to 8 interns, who are divided into
14 3 teams (**Figure 1**). In the morning shifts from 7:00 am to 3:00 pm each one works in an assigned service for 2
15 months, but after that time a team of interns works in the evening and night shift for all the services of the
16 hospital. This may seem like a lot of work, however there were good days and bad days. On good days our only
17 job was to monitor admitted patients and support scheduled surgeries on the afternoon shift, but on bad days
18 we had to support delivery care, cesarean sections, neonatal resuscitation, emergency department consultation,
19 Foley catheter placement, wound suturing, etc. This was a great opportunity to practice different things over the
20 course of a year.

21
22 In a secondary healthcare hospital, do you only see common diseases? The epidemiology of the reason for
23 consultation and care is different by region and hospital. Being at a second level of care provides the tools to
24 know what you can solve and what should be referred immediately. Despite that, there are many conditions
25 with a rare incidence or as part of an incidental finding that can be found at this level of care. For example,
26 Mondor's syndrome, thanatophoric dysplasia, *Loxosceles reclusa* bite, granulomatosis with polyangiitis, cyclic
27 vomiting syndrome and arthrogyriposis multiplex congenita. The key to making these diagnoses with the limited
28 resources available is the physical exam and health assessment that allow for timely referral to another level of
29 care. In the absence of all the resources to confirm a diagnosis, referrals are usually made to other hospitals
30 that have the corresponding services to confirm the diagnosis (e.g., the genetics service).

31
32 Is research possible in a secondary healthcare hospital? In my hospital, there is no fund that directly supports
33 research led by an undergraduate internal medicine physician. But it does provide us with the following items:

- 34 1. Computer equipment with the software needed for research (Mendeley, R software, Epi Info™, etc).
- 35 2. A period of time in the hospital to do research.
- 36 3. Resident physicians or specialist physicians with the interest to support in research projects.

37
38 No matter where you are, research is always a possibility. So far, I found the opportunity to work on the report
39 of two clinical cases and a narrative review, which are in the process of research.

40 Regardless of the type of hospital you are in, I suggest 7 points:

- 41 1. Be a proactive person.

- 1 2. Study about your patients' diagnosis and ask your doubts.
- 2 3. Research and publish your work.
- 3 4. Share the information you have with your colleagues and have a dialogue.
- 4 5. Learn and teach.
- 5 6. Use the technological tools at your fingertips, computer or smart phone.
- 6 7. Guarantee the best working conditions for your colleagues and for you, through a proactive and
7 respectful dialogue with the corresponding authorities in your hospital.

8
9 In my perception, that if you have a good attitude to learn, are proactive and take advantage of all the
10 opportunities that come your way, you can achieve great results regardless of the type of hospital in which you
11 find yourself. The undergraduate medical internship, for all its structural flaws, provides a year of opportunity to
12 complete 5 years of study. I hope my small experience can help you understand the benefits of this scenario.
13 There are no small opportunities for big people, there are people who accomplish their goals with all the
14 possibilities they find.
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1 **FIGURES AND TABLES.**

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3 **Figure 1.** Medical Interns and Resident Physicians of the General Hospital of Pabellón de Arteaga

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